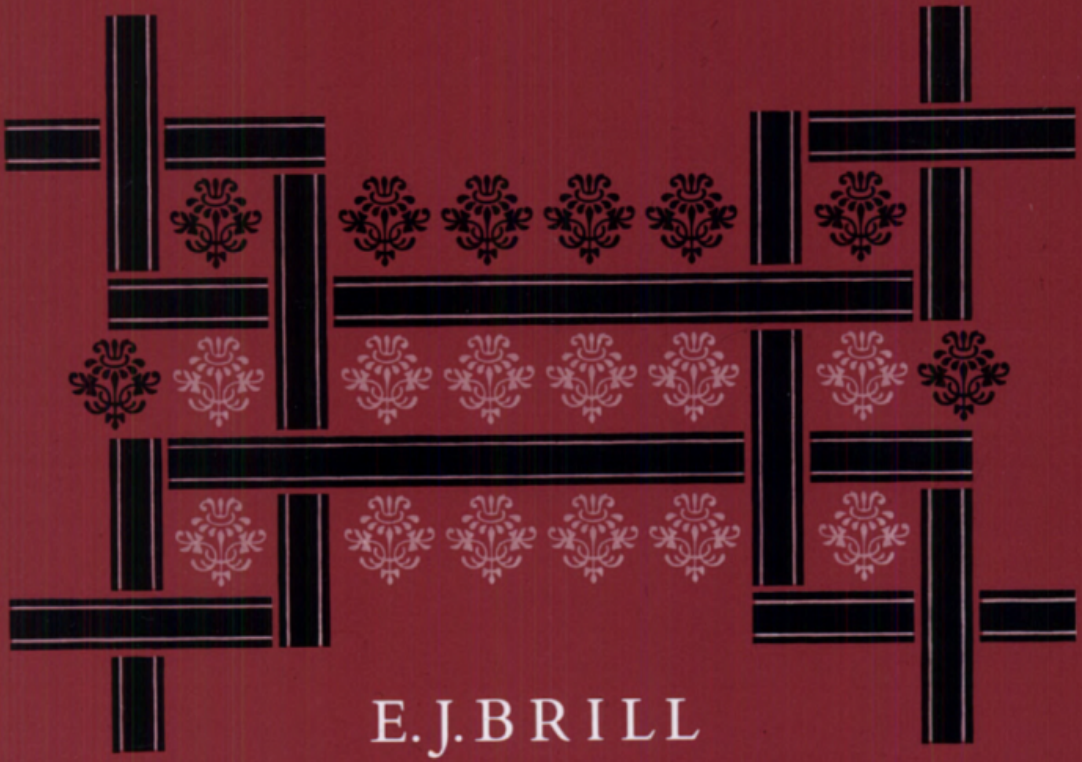
John Philoponus' New Definition of Prime Matter

Aspects of its Background in Neoplatonism & the Ancient Commentary Tradition

by

Frans A. J. de Haas



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JOHN PHILOPONUS' NEW DEFINITION OF PRIME MATTER

ASPECTS OF ITS BACKGROUND IN NEOPLATONISM AND THE ANCIENT COMMENTARY TRADITION

This study provides the first full discussion of Philoponus' excursus on matter in *Contra Proclum* XI.1-8 which sets out the innovative definition of prime matter as three-dimensional extension.

The author argues that Philoponus' definition was motivated primarily by philosophical problems in Neoplatonism. Philoponus employs the explanation of growth, the interpretation of Aristotle's category theory and the notions of formlessness and potentiality to substantiate his definition. To conclude, the book offers an assessment of the significance of Philoponus' innovation. It is demonstrated for the first time that Plotinus' view of matter exerted considerable influence on both Philoponus and Simplicius. Moreover, the structure of Syrianus' and Proclus' metaphysics prepared the way for Philoponus' account of prime matter.

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JOHN PHILOPONUS' NEW DEFINITION OF PRIME MATTER

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FRANS A.J. DE HAAS

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Ταῦτα δὲ ὡς σαφῆ ὄντα παρῆκεν ὁ Ἀριστοτέλης
Aristotle omitted this because he believed it was evident

John Philoponus, *In De generatione et corruptione* 74.3

For Monique

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PREFACE

This book grew out of an interest in Neoplatonism that was kindled by the enthusiasm of Dr Piet Meijer, to whom I am grateful for initiating me in the pleasures of Ancient Philosophy. His lectures on Proclus led me to Philoponus, that formidable critic of Proclus, and so to the theme of my doctoral research: Philoponus' notion of prime matter. This volume contains a revised version of my 1995 Leiden dissertation.

In preparing this book I was very fortunate to have the guidance and support of two distinguished scholars, Prof. dr. Bertus de Rijk, who acted as my *promotor*, and Prof. Richard Sorabji. De Rijk's vision and acumen saved me from many errors and our discussions often left me in a beneficial state of aporia from which I can only hope to have recovered satisfactorily. As to Richard Sorabji, an expression of gratitude can hardly do justice to my debt to him. His enthusiasm for the ancient commentators has been a constant stimulus. My research has benefited enormously both from his scholarship and philosophical zeal, and from the numerous occasions on which he allowed me to read my work to different audiences during my time in London. I am also indebted to friends and colleagues in both Holland and Britain for discussion of my views as they developed.

Thanks are also due to Professors Jaap Mansfeld, David Runia and C.M.J. Sicking for their expert advice and suggestions on how to improve the book. I am grateful to Andrew Coles and Ian Crystal for their willingness to perform the weary task of correcting my English.

It goes without saying that the responsibility for the errors that remain is entirely mine.

I gratefully acknowledge that my investigations were supported by the Philosophy Research Foundation (SWON) and its successor, the Foundation for Research in the Fields of Philosophy and Theology (SFT), both subsidized by the Netherlands Organization for Scientific Research (NWO).

This book is dedicated to my wife Monique who stood by me during the past years of time-consuming research. By lending me her ear she helped me enormously to shape my thoughts. Moreover, I am most

grateful to her for continually reminding me of the need to combine the distant past with the present.

Amersfoort
1 July 1996

Frans de Haas

INTRODUCTION

Puzzles concerning matter have exercised minds throughout the history of philosophy. Indeed, matter is a highly elusive notion. For ages it was considered devoid of any determination whatsoever, infinite, and hardly accessible to reason, and yet so fundamental to the understanding of the sensible world that continuously new attempts were made to comprehend the incomprehensible.

As far as the development of the definition of matter in Late Antiquity is concerned, it is clear that Plato's doctrine of the receptacle and Aristotle's notion of the material cause proved the most seminal. The success of the Platonic and Aristotelian doctrines, however, was not due to their perspicacity; the notorious difficulties which plagued the Platonic and Aristotelian conceptions of matter in Antiquity are still with us today. On the contrary, it was their very opacity which prompted subsequent philosophers to rethink the notion of matter.

As is well-known, the doctrines of Plato and Aristotle differ in at least one important respect. Plato's receptacle is the unique container of all images of the Forms, whereas Aristotle's material cause is a principle which can only be understood in its relation to a particular form. In each case matter's role of providing a well-defined principle for change is performed by a different aspect of reality, depending on the topic and the level of analysis. For instance, a combination of the four elements serves as matter for the constitution of flesh and blood. These in turn serve as matter for parts and organs of animals. In short, whatever something is in itself, from the perspective of its role as material principle it can be regarded as matter.[1]

In Late Antiquity the name of 'prime matter' was attached to the unique, formless and (hence) incorporeal matter of the universe which most Neoplatonists regarded as the most basic level of the physical realm. Needless to say, this notion of prime matter, which I shall henceforth call 'traditional', was much indebted to the receptacle of Plato's *Timaeus*. As for Aristotle, it is still a matter of debate whether the notion of prime matter is present or at least required in his philo-

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[1] Cf. e.g. *Phys.* II.2 194 a 8-9; *GA* I.1 715 a 9-11; *Meteor.* IV.10 388a13-20.

sophy.[2] However, judging from the Neoplatonic commentators, I consider it likely that the incorporation of Aristotelian texts at the beginning of the Neoplatonic philosophical curriculum[3] led to the result that Aristotle's material cause was interpreted as the equivalent of the receptacle of Plato's *Timaeus* which the students were to encounter later in their course. From that harmonising perspective the traditional notion of a unique and formless prime matter is a feasible outcome.[4]

In recent years the topic of prime matter in Neoplatonism has received considerable attention. The interpretation of Plotinus' essay on matter (*Enn.* II.4 [12])[5] and his doctrine of the generation of matter[6] have been subjected to much debate. The revival of research on the ancient commentators has led to several treatments of the doctrine of matter in Simplicius and, especially, Philoponus.[7] The interest in Philoponus can be explained from the fact that his doctrine may have prepared the ground for such thinkers as Aegidius Romanus, Descartes, and Newton.[8]

It is important to note that Philoponus seems to have altered his view on the notion of prime matter. In his earlier work Philoponus employed the traditional notion of prime matter as an entirely formless substrate. However, in his polemic *De aeternitate mundi contra Proclum*[9] he clearly and wholeheartedly rejects the traditional notion of

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[2] This debate, which I cannot pursue here, can be traced through King (1956), Solmsen (1958), Charlton (1970, 1983), Robinson (1974), Dancy (1978), Jones (1983), Graham (1987), Moriani (1988), Cook (1989), Narbonne (1993) 237-249 (in relation to Plotinus) and Bemelmans (1995). Nor shall I discuss the views of modern interpreters who believe that prime matter in Aristotle is three-dimensional or otherwise characterized, e.g. Sokolowski (1970) 275-288, Dye (1978) 70-72, Cohen (1984) 179-181, Byrne (1995). These modern scholars seem to be unaware that many of the arguments they present come close to those of Philoponus. Inasmuch as they rely on *Phys.* IV.2 (= T10) and *Metaph.* VII.3 (= T11), my doubts about their views follow from my discussion of these texts in Ch. 2, p. 57ff.

[3] See e.g. I. Hadot (1990a) 22-47.

[4] For this suggestion, which still awaits further examination, compare King (1956) 388-389, Charlton (1970) 141-145.

[5] See e.g. Wagner (1986), Narbonne (1993, 1994).

[6] Corrigan (1986, 1988), Narbonne (1987, 1994 Appendice), O'Brien (1988, 1990, 1991).

[7] See p. xv-xviii.

[8] See e.g. Sambursky (1962) 165; Wolff (1971) 146-148; Sorabji *MSM* 38-39; Donati (1988) 155-156.

[9] Ed. Rabe (1899), esp. XI.1-8. Henceforth I shall use the abbreviation *Contra Proclum*, to distinguish this work from the *De aeternitate mundi contra Aristotelem* = *Contra Aristotelem*, ed. Wildberg (1987a). John Whittaker (Newfoundland), who

prime matter. In conscious opposition to the entire philosophical tradition he introduces a new definition of prime matter as three-dimensional extension which both ignores definite size and rejects the idea of the traditional incorporeal prime matter as its underlying substrate. Philoponus remained faithful to the new definition of prime matter throughout his later work.

Philoponus' view of matter was first discussed in detail by Michael Wolff (1971). He distinguished an earlier and a later theory of matter both of which, he believed, were inspired by Philoponus' wish to defend the Christian concept of creation. Although Wolff's pioneering study has a number of drawbacks[10] he rightly emphasizes the importance of the tradition concerning the interpretation of Aristotle's doctrine of growth and the categorial status of the differentia.[11]

Koenraad Verrycken was the first to reconstruct the entire metaphysics of both Ammonius and his pupil Philoponus. In numerous publications (see the Bibliography)[12] he set out his thesis that we should distinguish two separate philosophical systems in Philoponus' thought, to which all of Philoponus' writings (in whole or in part) can be assigned. Philoponus 1 defends a Neoplatonist system in the tradition of Ammonius. To this period we should assign e.g. the commentaries on the *Categories* and *De generatione et corruptione*, as well as the greater part of the *Physics* commentary. Philoponus 2 defends the Christian belief in God, the Creator, and works to adjust the philosophical world view accordingly. To this period we should assign e.g. the *Contra Proclum* (written about 529 AD[13]), the *Contra Aristotelem*, and the *in Meteorologica*, as well as later insertions in and reworkings of some of the earlier commentaries, esp. the Corollaries on Place and Void in the *in Physica*.[14] The *Contra Proclum* marks a radical *volte-face* from the earlier to the later philosophical system which

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is preparing a new edition of the *Contra Proclum* for the Budé, assured me in personal communication that Rabe's edition is reliable.

[10] A succinct critique of Wolff can be found in Verrycken (1994) 31-34.

[11] For which see below Chapters 3 and 4 respectively.

[12] I am much indebted to Dr Verrycken for providing me with a copy of his dissertation.

[13] *Contra Proclum* 579.14-17 contains a reference to the present time as the 245th year of Diocletian (= 529 AD) and a 'conjunction of the seven planets in the same sign of the zodiac' (21 May 529). Cf. Wildberg (1987b) 200-201.

[14] *In Phys.* 557.8-585.4 and 675.12-695.8 respectively, translated by Furley in Furley/Wildberg (1991).

took place around 529 AD. According to Verrycken, the new definition of matter is part of the philosophy of Philoponus 2[15] and motivated by the need for a metaphysics of creation.

Verrycken's two-systems hypothesis and especially the radical *volte-face* of 529 AD leave little room for the possibility (which I shall endorse here) that e.g. the theory of matter was developed over a longer period of time and for other, more philosophical reasons than its first publication in the *Contra Proclum* would suggest. I believe Verrycken reached his results partly because he made the understandable choice not to include in his study a systematic treatment of Philoponus' dependence on his predecessors and contemporaries—a task he leaves for others to accomplish.[16] As soon as Philoponus' work is assessed in relation to the philosophical discussions of his time (which I intend to accomplish only within the context of prime matter) we may have to redraw parts of the picture.[17] Nevertheless, Verrycken has offered an impressive reconstruction of Philoponus' thought to which this book is much indebted.

Richard Sorabji (1986-88) has devoted considerable attention to Philoponus and his theory of matter in several publications, and Philoponean research in general owes much to his stimulating work. His *Matter, Space, and Motion* (1988) contains his most considered position on Philoponus' notion of matter and will serve as point of reference here. Sorabji records two novelties for the *Contra Proclum*: the rejection of the traditional concept of an incorporeal formless matter and the promotion of the three-dimensional to the rank of essence of body and hence to the category of substance.[18]

Sorabji is the first to provide an elaborate account of apparent and possible forerunners of Philoponus' new definition. One obvious candidate is Plato's *Timaeus* although the introduction of the receptacle in *Tim.* 48 e-53 c provides clues both for and against regarding it as a substrate. Sorabji believes that Aristotle's criticism of the alleged identification of place and matter in Plato (for Aristotle place is im-

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[15] This prompts Verrycken to try and bring a number of references to matter in the Corollaries in line with the philosophy of Philoponus 2. In Chapter 1 p. 31-36 I shall argue that his interpretation is not convincing.

[16] Verrycken (1985) I 4, cf. *id.* (1994) 12-13.

[17] Elsewhere I hope to deal with part of this complicated issue, viz. the position of the Corollories on Place and Void in Philoponus' *Physics* commentary. Cf. Ch. 1, p. 31-36.

[18] Sorabji *MSM* 25-26.

mobile while matter moves with the object) would have discouraged later philosophers from developing the idea further.[19] Sorabji firmly establishes Aristotle *Metaph.* VII.3 1028 b 36-1029 a 28 and *Phys.* IV.2 209 b 6-11 as prime sources for any development of a notion of matter involving the three dimensions.[20] In these passages Aristotle employs a method of subtraction of properties down to the three dimensions and further so as to reach matter.[21] In spite of a superficial likeness, Sorabji does not consider the Stoic material principle as a precedent for the view that body is extension. More likely sources of inspiration, he believes, are Moderatus of Gades as preserved in Simplicius,[22] and the imaginary opponent introduced by Plotinus in *Enneads* II.4 [12] 11.1-13, who rejects a prime matter that contributes nothing to the substance. Sorabji understands the opponent to mean that we should regard magnitude, the next layer up, as prime matter. This would indeed be a precedent for Philoponus' view.[23] Finally, Sorabji noted the convergence of Philoponus with Simplicius on the issue of prime matter.[24] For Simplicius was convinced that Aristotle's prime matter was in fact an unbounded, diffused extension, which received all limits, including size, from form. Besides, Sorabji claims that Simplicius moved prime matter into the category of substance.[25] As Sorabji notes, the convergence with Philoponus is only partial: for Philoponus the claim that three-dimensional extension is prime matter

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[19] Sorabji *MSM* 32-36. One may doubt the impact of Aristotle's criticisms, given the fact that Proclus reinstated Plato's triangles in his *Investigation of the Objections of Aristotle to Plato's Timaeus* against Arist. *Cael.* 306 a 1-307 b 24, see Procl. *in Tim.* I 404.20-21, II 279.2-4, with Rosán (1949) 51. Simpl. *in Cael.* 640.24-27 mentions this work and opposes each of Aristotle's criticisms by means of Proclus' replies. A detailed discussion of this part of his commentary is a *desideratum* of modern research. Proclus also wrote against Aristotle's concept of place, see Hoffmann (1979), Schrenk (1994a).

[20] Mueller (1970) 165 was the first to point to *Metaph.* VII.3 in this connection, also quoting Philop. *in Cat.* 83.14-17.

[21] I shall discuss these famous but difficult texts and their influence in Chapter 2, where I also hope to shed some light on the question *why* these texts became so important for the later Neoplatonists.

[22] Sorabji *MSM* 20, 31-32. The passage concerned is Simpl. *in Phys.* 230.34-231.24 (see T20).

[23] However, Wildberg (1988) 210 n. 79 rejects not only Moderatus but also Plotinus' opponent as possible sources, unfortunately without argument. For my interpretation of this passage, which differs from Sorabji's, see p. 270ff. with T49.

[24] Sorabji *MSM* 10, 23.

[25] Sorabji *MSM* 14. This claim does not seem to be correct, see p. 178-180.

is what Aristotle should have said but did not, whereas for Simplicius it was what Aristotle really meant. Furthermore, Simplicius denies that prime matter is body, unless perhaps in a secondary sense.[26] Anyone who is to assess the historical background of Philoponus' new definition of matter will at least have to examine each of these possible forerunners carefully.[27]

Wildberg (1988) devoted an excursus to the notion of three-dimensionality in Philoponus, in which he discussed a limited number of texts from the *in Physica,* the *Contra Proclum*, and the *Contra Aristotelem.* Unaware of Verrycken's unpublished thesis Wildberg suggested a gradual development in Philoponus' thought towards a rejection of the traditional notion of prime matter and the promotion of three-dimensionality to the category of substance. He regards 'the three-dimensional' as 'basic corporeal extension, or better still, extended corporeality' which, he believes, would be difficult to regard as an attribute.[28]

Finally, De Groot (1991ab) pays attention to the separability of three-dimensional extension in thought, in the context of assessing Philoponus' views of the physical basis for mathematical demonstration in optics.[29] She suggests that Philoponus had to hypostatize the three-dimensional in order to account for the separation of physical forms which is required for mathematical demonstration. However, we shall see that the three-dimensional had already acquired a secure position in philosophy before Philoponus. De Groot is the only commentator who draws attention to the relevant texts in Philoponus' commentary on the *Posterior Analytics* and to his versatility with regard to theoretical distinctions.

This short survey of recent scholarship may show that much still remains to be done to elucidate the influence of Neoplatonism on Philoponus' new definition of matter and his defence of it. Without this elucidation, any judgement on his motives and the extent of his innovations seems premature. More specifically, the exact nature of 'the

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[26] Simpl. *in Phys.* 201.23-27, 228.17-230.33, 232.8-13. See further Ch. 2.

[27] For Plato, Aristotle, Moderatus, and Simplicius see Ch. 2; for the Stoics see Ch. 1; for Plotinus see Ch. 5, 267-270.

[28] Wildberg (1988) 218-219. For the status of three-dimensionality as a form, see Ch. 5.

[29] De Groot (1991a) 95ff.

three-dimensional' and the plausibility of its being prime matter stand in need of some clarification.

Therefore this study will examine Philoponus' new definition of prime matter from the point of view of Neoplatonic thought. I shall attempt to reconstruct the philosophical questions Philoponus tried to answer when he was developing his new definition. This means that my aim is not so much to identify the sources of Philoponus' doctrine, but rather to establish the philosophical framework that motivated a reappraisal of the notion of prime matter.

Some of the relevant problems Philoponus had already discussed before the *Contra Proclum*, e.g. the problem whether in growth new space is generated to hold the larger quantity.[30] Other problems were discussed by earlier Neoplatonists who thus paved the way for Philoponus' new definition. Most important was the ontological classification of the differentia, the characteristic which causes the species within one and the same genus to be different from one another. Is the differentia a substance because it is part and parcel of the essence, or does it belong to a category on its own merits, as rationality belongs to quality and three-dimensionality to quantity? If in the new definition of matter three-dimensionality (apparently a quantity) is the differentia of body (a substance) a category mistake is looming large.[31]

In the *De aeternitate mundi contra Proclum*, which is designed to defend the Christian notion of *creatio ex nihilo*, Philoponus sets out his new definition of prime matter for the first time. Proclus had written *Eighteen arguments concerning the eternity of the world*,[32] a systematic survey of arguments against every attempt to prove that the universe had a beginning. In the *Contra Proclum*, which is itself the first of a series of refutations of some of the most fundamental tenets of pagan philosophy,[33] Philoponus attacks these arguments one by one.

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[30] For Philoponus' development in this respect see Ch. 3.

[31] For Philoponus' solution to this problem see Ch. 4.

[32] In the *Suda* IV 210.13-18 (Adler) the phrase 'against the Christians' is added to the title of Proclus' work. Saffrey (1975) 554 argues that because of Codex Justinianus I.1.3 (dated 448 AD), ordering the destruction of all works directed against the Christians, it is unlikely that Proclus would have added this phrase to the title himself and suggests that the addition is a later interpretation deriving from Philoponus' polemics. The manuscript titles and references listed in Rabe VIII-XIII lack the addition. We shall see, however, that the order of the arguments in *Aet.* XI betrays that Christians rather than (Neo)platonists are its target, see Ch. 1, p. 17.

[33] The *Contra Proclum* contains several announcements of later work (see e.g. 9.22-27, 134.16-19, 258.24-26, 483.18-21; cf. Rabe (1899) *Index nominum s.v.*

The treatise on matter, which this study will take as point of departure, is inserted in Book XI of the *Contra Proclum* as an excursus preliminary to a detailed refutation of Proclus' eleventh proposition, which was devoted to the eternity of matter. *Contra Proclum* XI.1-8 contains a comprehensive discussion of the issue of prime matter. Philoponus outlines the traditional position and contrasts it with his own views. In addition, he replies to several objections which he expects his opponents will raise against his new definition of prime matter. Finally, he elaborates on the absurdities that follow from the traditional view. Since *Contra Proclum* XI.1-8 constitutes such a comprehensive discussion of the issue, our examination will closely follow the argument of that passage.

We shall examine each aspect of *Contra Proclum* XI.1-8 both in the context of the *Contra Proclum* and in the wider context of earlier and contemporary Neoplatonic thought. The reconstruction of the problems Philoponus is addressing will force us to discuss and examine some of the philosophical doctrine of various Neoplatonic authors. Most important in this respect are Proclus, Philoponus' target in the *Contra Proclum*; Simplicius, a contemporary of Philoponus who developed almost the same view of prime matter; and Plotinus, whose treatment of matter exerted a decisive influence on Neoplatonic thought, not least the thought of Philoponus and Simplicius. Moreover, since a considerable part of Philoponus' writings consists of commentaries on Aristotle, the Neoplatonic commentary tradition will be taken into account.

This choice of material implies several important restrictions. I have left out of consideration Philoponus' theological works, which are all of a much later date than the *Contra Proclum,* as well as Philoponus' relation to Patristic thought. This is certainly an area that deserves further examination, for which, however, others are better qualified than I am. Besides, Philoponus' *Contra Proclum* is designed as a philosophical polemic in a pagan context. We find very few arguments

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Ioannus Philoponus), and the κεφάλαια of the last book (611.25-26) list a tantalizing Ἐπίλογος τῆς πάσης πραγματείας καὶ προαναφώνησις τῶν ἑξῆς as the last chapter—which is unfortunately lost. So is the prologue of the work: Rabe (*app.crit. ad* 1.1) suspects that about 40 Teubner pages are missing from the beginning. He accepts the authenticity of the κεφάλαια (p. XIII), and so does Sorabji in his references. However, since they do not add anything which is not present in the chapters themselves I refrain from references to these summaries, which are prefixed to every book of the *Contra Proclum*.

which rest on the authority of the Bible; Christian theology, whether orthodox or monophysite, does not play any role whatsoever. Indeed, there are very few indications that the author of the *Contra Proclum* was a Christian—even the defence of *creatio ex nihilo* is not a Christian's prerogative. One should notice, however, that the beginning and end of the *Contra Proclum* are lost, and it is possible that the prologue and epilogue contained a more explicit pronouncement on the Christian motivation for the programme Philoponus had embarked on in 529 AD. We know, for instance, that the eighth book of Philoponus' second polemic on the eternity of the world, directed against Aristotle, contained a doctrine about the end of the world which is indebted to the biblical prophecy about a new heaven and earth.[34] On the other hand, from the prologue of Philoponus' *De opificio mundi* we may gather that his fellow Christians had urged him for once to defend creation on Christian terms—implying that the *Contra Proclum* did not fulfil this demand.[35]

A further restriction will be that the interpretation of the numerous Platonic and Aristotelian texts referred to in this study will not be primarily aimed at illuminating Plato's or Aristotle's thought. In the context of understanding the late Neoplatonic commentators, it is far more useful to focus on how they interpreted Platonic and Aristotelian doctrine and what their motives were. More often than not it is counterproductive to start comparing ancient and modern interpretations, pronouncing judgements on whether ancient interpretations are plausible or perhaps wide of the mark—as if modern scholarship has reached consensus about the interpretation of Plato and Aristotle.

Finally, I have refrained from noting each and every reminiscence of earlier doctrines and texts. This is not merely because it is virtually impossible to keep track of the reminiscences of a millennium of ancient thought when studying a part of later Neoplatonic philosophy. More important is that in doing so one could easily fail to do justice to Neoplatonism itself which deserves to be studied and respected in its own right. The commentators have been used as no more than a quarry for information about their predecessors for too long.

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[34] *Contra Aristotelem* fr. 134 Wildberg. Significantly, Simplicius only preserved fragments from books I to IV of the *Contra Aristotelem*, drawing the picture of a Philoponus who is arguing from the point of view of the pagan philosophical tradition. See Ch. 6 p. 293 n. 40.

[35] See *Opif.* 1.14-2.8.

As I indicated above, the Neoplatonic commentaries on Aristotle will play an important role in this study. The interpretation of these commentaries raises at least two serious problems.[36] First, the philosophical convictions of the commentators have to be gleaned from their interpretations of Aristotle's texts. However, the range of their discussions is usually determined by Aristotle's argument. Besides, the commentaries reflect school practice and since Aristotle was read with freshmen, a commentary on his text will hardly ever exhaust the Neoplatonic position, if only for didactic reasons. Moreover, it is often impossible to make out whether a commentator is merely elucidating Aristotle's thought for the sake of the commentary or whether he is also associating himself with that thought. It is also difficult to draw conclusions from the position where certain topics are treated in the commentary, for that position is to a large extent determined by the commentary tradition and does not necessarily reflect a deliberate choice of the individual commentator. Therefore, the main argument of this study will rely mostly on passages in which the Neoplatonic perspective is either so obvious that they cannot be taken as merely an elucidation of Aristotle, and passages in which commentators indicate clearly that they are expressing their own views.

The second problem concerns the notion of source. It goes without saying that in many details the commentaries on Aristotle are our only source for the Neoplatonic point of view. However, the position of the commentaries on Aristotle in the Neoplatonic curriculum as explicitly pointed out in the prefaces of the commentaries suggests that Aristotle was read in view of the final initiation into Plato's physics (*Timaeus*) and metaphysics (*Parmenides*) to which the course in philosophy was intended to lead.[37] This explains the ingenuity of the commentators in creating interpretations of Aristotle that will diminish the conflict with Plato as understood by the later tradition. The commentators often point out the extent to which Aristotle agreed with and therefore anticipated Neoplatonic doctrine. In such cases it can be difficult to de-

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[36] For general discussions of the commentary tradition see Geffcken (1932), Van Berchem (1952). I am grateful to Heleen Keizer for these references. For a study of the prolegomena in the commentaries see now Mansfeld (1994) who has an extensive bibliography on the commentary tradition. For an interesting discussion of medieval practice see Hamesse (1986).

[37] For the Neoplatonist conviction that the goal of Aristotle's philosophy was the One see e.g. I. Hadot (1990a) 97-103, P. Hadot (1972).

cide whether the commentator regards the Aristotelian text as the source of a particular Neoplatonic doctrine, or whether he is merely using Aristotle to confirm a Neoplatonic doctrine of a different origin.

It seems safest then to start by treating Aristotle's lemmas as mere *occasions* for the explication of a piece of Neoplatonic doctrine; usually Aristotle's text will at the same time be treated as *confirmation* of the Neoplatonic doctrine involved. Only in the last resort should we think of it as a *source* for the doctrine. However, we are allowed to infer from the discussion of the commentators which problems they are interested in and which pieces of doctrine they considered relevant for the solution of those problems. This information is sufficient for our reconstruction of the problems Philoponus was trying to solve.

If a general indication of the conclusion reached at the end of this study is appropriate in an introduction, it will be that nearly every aspect of Philoponus' new definition of prime matter as well as the philosophical framework of his defence of it have strong roots in the Neoplatonic philosophical tradition,[38] and that Philoponus was aware of these roots. In many issues there is no reason to have recourse to Christianity as a motive for the development of Philoponus' thought. In this context the parallel of Simplicius, who developed almost the same doctrine of prime matter, is significant. I believe that Philoponus was genuinely interested in contemporary philosophical debates, despite their pagan background. His commentaries, especially the ones relating to (meta)physics, display an impressive knowledge of current doctrine and a critical and exploring mind. Not only the issue of *ex nihilo nihil,* but also theories of mixture, the interpretation of Aristotle's explanation of growth, as well as the nature and function of prime matter were interesting in themselves to philosophers of whatever persuasion. I consider it a possibility that Philoponus developed many of his innovative ideas, especially those on matter, in that context and from that perspective. We simply do not know whether he intended all along to develop a set of ideas that could serve as a powerful defence of creation *ex nihilo*. Simplicius developed a similar view of prime matter to that of Philoponus, and there is no doubt that Simplicius was a pagan philosopher. Therefore, we should allow for the possibility that Neoplatonic metaphysics gave rise to questions of its own, regardless of the interests of the Christian Philoponus.

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[38] Cf. MacCoull/Siorvanes (1992) 157-158.

If 529 AD was not so much the year of a change in doctrine, it certainly was the year of a change in perspective. It is this perspective that aroused Simplicius to his extensive polemics against the *Contra Aristotelem* and the *De contingentia mundi*.[39] Despite their convergence on the issue of matter, Simplicius and Philoponus are worlds apart. The clearest indication of this is their different attitude towards the philosophical tradition. Simplicius represents the harmonising approach: he presents himself as a humble servant whose sole wish is to fathom the doctrines of the great masters of old—and at the same time he defends an innovative view of matter which he subsequently feels obliged to squeeze out of his sources in order to preserve this golden chain of thought. Philoponus takes an independent attitude: he freely criticizes Plato and Aristotle, and takes them to task for their lapses and absurdities. I believe that this difference in attitude between Simplicius and Philoponus cannot be explained solely by a difference in character or intellectual interests. Is it speculating too much to suggest that Philoponus' independence is eventually rooted in his faith, which provides an orientation that does not rely on the philosophical doctrines under discussion? And will not at least some of Simplicius' invective have arisen from the threat to his orientation in life?

Whatever the exact reason for Philoponus' change of perspective in 529 AD, it is certain that from that year onwards Philoponus knew where he was heading: a comprehensive refutation of the doctrine of the eternity of the world and proof that the universe was created by God. The *Contra Proclum* is the earliest work we have that emphasizes this perspective and we have reason to believe it was the first to do so. In many details, Philoponus has not yet reached his final position in the *Contra Proclum*, and it has been pointed out that in several areas the *Contra Proclum* is self-contradictory (e.g. on the ontic status of angels) or superseded by later work (e.g. in the application of impetus theory to the heavens in the *De opificio mundi*).[40] However, in later work Philoponus refers to the *Contra Proclum*'s doctrine of prime matter as his final judgement of the issue.[41] Hence the introduction of

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[39] The testimony of Simplicius is translated with introduction and indices by Wildberg in Furley/Wildberg (1991) 95-141.

[40] Verrycken (1990b) 264-273.

[41] See e.g. Philop. *Contra Aristotelem* fr. 72, 86 W.; ap. Simpl. *in Phys.* 1331.21. For the significance of Philoponus' new definition of prime matter in his later thought, see further Ch. 6.

the new definition of prime matter in the *Contra Proclum* deserves special treatment as an important stage in Philoponus' development towards a comprehensive metaphysics of creation.

CHAPTER ONE

PROCLUS AND PHILOPONUS

The most interesting part of Philoponus' discussion of Proclus' eleventh argument (*Contra Proclum* XI.1-8) is introduced as a digression preliminary to the refutation of this argument. However, as Philoponus clearly states at the end of this digression,[1] the ideas laid down there completely change the perspective on the concept of matter. Hence, they constitute a more fundamental refutation of Proclus' argument than the chapters that follow (XI.9-15). If we are to appreciate the contrast between Proclus and Philoponus it is necessary to analyse the structure of Proclus' argument and the conceptions that lie behind it.

I PROCLUS AGAINST THE GENERATION OF MATTER *EX NIHILO*

Philoponus' comprehensive attack on the philosophical consensus concerning prime matter is embedded in his work *De aeternitate mundi contra Proclum*. The *Contra Proclum* is a polemic against Proclus' *Eighteen arguments on the eternity of the world*,[2] which is itself a polemic against the Christian belief in creation. Proclus' eighteen arguments mostly draw on his interpretation of Plato's *Timaeus* and range widely: they are concerned with the nature of the Demiurge (1, 3, 6, 12, 14, 16, 18), the Model (2, 15), and the World Soul (7); with causation (4) and time (5); with the processes of generation and corruption (8-9, 17), the movement of the heavens (13), the elements (10), and matter (11-12, 14).

Proclus' eleventh argument focuses on the eternity of the matter of the universe: if this matter is eternal, the universe is eternal. Matter is eternal because otherwise an infinite regress would arise: the hypothetical generation of matter would require an anterior matter; the generation of *that* matter would require an anterior matter etc. Because an infinite regress is unacceptable, matter is eternal; hence, the universe is

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[1] *Contra Proclum* XI.8 445.18-22.

[2] To simplify references, I shall refer to Proclus' work as *Aet.*, followed by the number of the argument and the page and line number of Philoponus' *Contra Proclum*, e.g. *Aet.* XI 403.15.

eternal. Since this argument provides the occasion for Philoponus' attack on the traditional notion of prime matter it deserves to be examined in some detail.

The argument as preserved in Philoponus *Contra Proclum* XI 403.15-404.28 runs as follows:[3]

T1 Eleventh [argument]:

1. He says that matter exists for the sake of the universe because it is the receptacle[4] of generation. That for the sake of which matter exists is nothing but generation. If, then, matter had come into being 'from nothing' (ἐκ μηδενός) it would be for the sake of something by chance and that which came into existence would have matter by chance. But none of the things that are by chance are necessary. Hence we shall assert that not even creation (δημιουργία) has a firm basis (403.15-21).[5]

2. If, then, the matter of generation, is for the sake of something 'from a certain cause' (ἔκ τινος αἰτίας)[6] it is necessary that matter and generation exist together. For 'what is for the sake of something' (τὸ ἕνεκά του) and 'that for the sake of which' (τὸ οὗ ἕνεκα) are correlated (μετ' ἀλλήλων πρὸς ἄλληλα) (403.22-404.1).[7]

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[3] For a German translation of the argument, see Baltes II 146-148. In translations square brackets [] indicate additions I consider relevant for the understanding of the text. Angular brackets <> indicate emendations.

[4] Cf. Plato, *Tim.* 49 a 5-6, 51 a 5: ὑποδοχή.

[5] This conclusion would run counter to the well-established Neoplatonic tenet that each level of the emanation is an indispensable part of the manifestation of the Good. Proclus (*in Tim.* I 387.25-26; *ET* prop. 72, 68.24-29) derives the necessity of matter from this principle because the Good creates everything, matter included. — Note that Plato *Tim.* 28 a 4-7, c 2-4 already connected generation with a particular cause (ὑπ' αἰτίου τινός) which raises the question for a 'maker and father' of everything.

[6] There is an ambiguity in the Greek, since ἔκ τινος αἰτίας can mean both 'out of some (material) cause' (cf. Arist. *Metaph.* VII.8 1033 a 25-26) and 'dependent on some (efficient) cause' (so Baltes II 147: "Wenn aber auch die Hyle um einer Sache willen, und zwar um des Werdens willen, von einer Ursache herstammt, ..."). Indeed, it seems that Proclus takes *ex nihilo* as the negation of an efficient cause, i.e. as a denial of *Tim.* 28 a 4-7, b 6-7. Of course, for a Neoplatonist emanation is thought to take place 'for some definite reason' and even of necessity *because* a definite efficient cause is responsible, viz. the Demiurge and ultimately the One. The One is also the Good, the goal of all desire and therefore the final cause as well. Cf. Procl. *ET* prop. 11-12; 23, 26.27 (Dodds); 27, 30.25 (Dodds); *in Tim.* I 387.23-30 (see Festugière II 252 n. 3): sterility is irreconcilable with the first principle's honour; besides, being a principle implies being a principle of something.— On the rather unexpected turn from creation *ex nihilo* to dependence on an efficient cause see below section I.1.2.

[7] Cf. Arist. *Phys.* II.2 194 a 28-b 9 (see further below, p. 7-8). See also Philop. *in DA* 410 b 10, 183.7-11.

3. If, then, matter is something eternal and for the sake of something *qua* matter, generation is eternal too. For generation is necessarily 'that for the sake of which' inasmuch as it is generation. Therefore matter and generation coexist eternally (τὸν ἀεὶ χρόνον) as 'that for the sake of which' and 'what is for the sake of something' (404.1-6).
4. For matter is matter of something, viz. the form upon it.[8] Particular matter is matter only when the form is present too. Hence artisans render suitable what is not yet matter, and the form supervenes to the extent they progress in making matter. For the stones are not matter of the form of the house before they are, say, polished and fitted together, but only when these additions have been made. So when they become matter in the true sense, just then the form is present instantaneously (ἀχρόνως) (404.6-14).[9]
5. Universal matter too is matter of all generation in all respects and potentially everything,[10] not in need of anything in order to be matter like particular matter. For that which is universal is everywhere and primarily such, not in need of anything in order to be what it is. If so, all forms are simultaneously in it as well. For when it is not in need of anything in order to be matter it is not in need of anything in order to possess forms. Hence, from the moment it exists it possesses the forms whose matter it is (404.14-21).
6. It is without generation and corruption so as not to be in need of another matter, being universal matter. Therefore also the forms exist in it from eternity and so does order (κόσμος). For it was matter of order, not of disorder and it was for the sake of order and not for the sake of disorder. For particular matter, too, does not exist for the sake of privation but for the sake of form. Hence, the universe (κόσμος) exists from the moment the matter of the universe exists (404.21-28). (Procl. *Aet.* XI ap. Philop. *Contra Proclum* XI 403.15-404.28; division and numbering mine)

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[8] Cf. Arist. *Phys.* II.2 194 b 9.

[9] The argument as it stands is confusing, as Philoponus points out in IX.14 369.21-370.10, for which see further Ch. 5 p. 281. Either the form supervenes gradually in time as the artisans make progress in preparing the material, or both matter and form come into being instantaneously. The tortuous phrase can however be explained from an earlier discussion among Platonists about the characteristics of demiurgic activity, see below p. 13, and De Haas (1989).

[10] This is the Aristotelianised description of Platonic matter, as customary in Middle Platonism and Neoplatonism, cf. e.g. Calc. *in Tim.* § 310, 321, 356 (with Van Winden (1959) 152-153, 173), Plot. *Enn.* II.5 [25] *passim*. For its origin in Aristotle see esp. *DA* 412 a 9 ἔστι δὲ ἡ μὲν ὕλη δύναμις, where the commentators read δυνάμει, see the OCT edition of *DA* by Ross, *app.crit. ad loc.*

From the start it is clear that the topic of this chapter will be the matter of all generation in the universe (also known as prime matter).[11] This matter is described in terms which are familiar from Plato's *Timaeus*: it is called the receptacle (ὑποδοχή) in which the images of the Forms appear (§1). The sensible universe is characterized as the world of generation, or becoming (γένεσις). Proclus posits a necessary relation between matter and generation through the notions of 'for the sake of something' and 'for the sake of which' (§2). From this assumption he shows that they necessarily coexist. Rather unexpectedly in an argument directed against Christian *creatio ex nihilo*,[12] Proclus apparently takes 'from nothing' (§1) to mean 'not depending on a cause' (cf. §2) which he immediately connects with 'chance', as opposed to stability (§1).[13] At the same time the notion of eternity is brought in: *if* matter is eternal, then generation is too (§3). We have to wait until §6 before the conditional is resolved.

The essential relation between matter and *generation* is further explained[14] as the essential relation between matter and *forms* (§4), presumably because generation is to be understood as generation of forms in matter. The argument turns on a craft analogy, although the relation between matter and form in the analogy is far from straightforward. Matter is not matter for most of the production process, but only comes to be when the form enters instantaneously. Since matter and form always exist together, they must come into being together. The instantaneous entrance of form in matter is introduced in order to exclude the possibility of there being a time in which matter is not yet (fully) formed. In short, Proclus argues for *concreatio*, the simultaneous creation of matter and form.

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[11] Proclus often simply uses the term ὕλη for the matter of the universe (e.g. *ET* prop. 72, 68.24-25 Dodds, *TP* III 34.7-8, 78.10-11, V 61.27 SW; *in Alcib.* 118.6; *in Tim.* I 385.1-2, 388.21-23), though πρώτη ὕλη also occurs (e.g. *TP* III 41.7, IV 111.24 SW; *in Parm.* 840.4); cf. ἐσχάτη ὕλη in *TP* II 127.30, III 45.6, IV 112.1 SW).

[12] The Church doctrine of *creatio ex nihilo* was developed in the second century as a response to Gnostic theories allotting (too much) significance to matter as an opponent of God; see May (1978) *passim*, esp. 84ff. where he points to Basilides for the first more detailed exposition of *creatio ex nihilo*. In Theophilus of Antioch *Autol.* II.4 we already find the doctrine that God's creation must be superior to human creativity (see May *o.c.* 75 for numerous parallels in Patristic literature).

[13] Cf. Arist. *Phys.* II.4-6, esp. 197 a 31 for the connection between chance and instability.

[14] *Aet.* XI 404.6 γάρ links the argument about generation to the argument about forms.

Proclus claims that particular matter can only be properly designated as such when it is suitable; universal matter, being matter primarily, possesses the capacity to accommodate forms (even *all* natural forms) unconditionally. It should be noted that this crucial difference between particular and universal matter is not proved. Apparently, Proclus' account of universal matter relies on Plato's *Timaeus*, where the receptacle is introduced as a separate kind,[15] not affected by the processes of generation and corruption that take place in it. The unaffectability which renders the receptacle indestructible also entails that it is eternally suitable, or it would not exist in the first place. Since the cosmos obviously exists, matter is eternally suitable. The account of particular matter, on the contrary, relies on the notion of proximate matter familiar from Aristotle's *Physics*. The notion of potentiality explains the successive stages of each process of generation; each stage entails a potentiality for yet another, specific, form. Here matter and form are specifically suited to each other, and since this notion of matter does not entail unaffectability the two may blend to constitute a unified whole; hence their reciprocal relation. One may wonder whether this creative combination of Platonic and Aristotelian doctrine does justice to either mode of thought—but that is not our concern here.

We saw that the reciprocal relation between form and proximate matter served as explanation and support for the relation between matter and generation (§4). Subsequently, an analogous relation is assumed in the case of universal matter: from the very moment that universal matter exists, all forms of the universe must be present in it (§5). This second series of arguments (§4-5) has now reached the same stage as the first (§1-3): *if* matter is eternal, so is the universe.

The two arguments are brought to the same conclusion in §6. Proclus claims that matter *is* eternal, because otherwise it would need another, more primary, matter in order to come into existence. This line of thought presupposes Aristotle's account of change in terms of matter, form and privation. The alleged generation of prime matter would constitute a change which requires another matter, to which the same principle applies and so on to infinity. Aristotle used the same regress argument in relation to proximate matter.[16]

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[15] Cf. Plato *Tim.* 49 a 4 ἕτερον εἶδος; 52 a 8 τρίτον γένος.

[16] See Arist. *Phys.* I.9 192 a 29-31, cf. Philop. *in Phys.* 190.17-191.8; *Metaph.* VII.8 1033 a 31-b 5; XII.3 1069 b 35-1070 a 4. Cf. Sorabji *TCC* 247.

If indeed matter is eternal, the desired conclusions can be drawn: generation and order—which now replaces form and is contrasted with disorder as privation—are eternal. In other words, the universe is eternal.

1 The origin of matter in Proclus' Timaeus*-commentary*

For Proclus every discussion about the eternity of the world must rely on the *Timaeus* of Plato. The problem of the origin of matter was dealt with within that context too, especially in the commentary on *Tim.* 30 a 3-6. When commenting on this passage (*in Tim.* I 381.26-396.26) Proclus presents an impressive array of arguments in favour of the eternity of matter and of matter's dependence on a cause, i.e. (ultimately) the One.[17] The eleventh argument of Proclus' *De aeternitate mundi* can be regarded as an abridged and revised version of this passage in his *Timaeus* commentary.

In *in Tim.* I 381.22-25 the commentary begins with the quotation of *Tim.* 30 a 3-6:

T2 [Desiring, then, that all things should be good, and, so far as might be, nothing imperfect, the god] took over all that is visible—not at rest, but in discordant and unordered motion—and brought it from disorder into order, since he judged that order was in every way the better. (Plato, *Tim.* 30 a 2-6, tr. Cornford [1948^2] 33)

Proclus points out that Plutarch and Atticus used this passage to prove that the cosmos had a beginning in time. According to them, the passage showed that matter existed as a principle next to the Demiurge and the Forms before the creation.[18] Moreover, they believed matter to possess a disorderly motion caused by an evil irrational soul. As a result of the activity of the Demiurge the irrational soul was subdued by reason (νοῦς) just as matter was turned into (the) cosmos by form (*in Tim.* I 381.26-382.12).[19]

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[17] See Festugière II 244-266, Baltes II 76-94.

[18] Following Festugière II 258 n. 2 *ad in Tim.* I 391.7 in reading <τὴν ὕλην καὶ> τὸν δημιουργὸν καὶ τὰς ἰδέας; cf. I 382.1, 391.11-13.

[19] See also Procl. *in Tim.* I 391.10-12, 276.30-277.7, and Plut. *De an. procr.* 1014 b-e, 1016 c (with Dillon [1977] 202-208). Numenius attributed the disorderly motion to matter itself, ap. Calc. *in Tim.* 299.14-18 Waszink = fr. 52, ll. 64-70 Des Places, containing a reference to Plato *Leg.* X 897 d.—In view of the discussions concerning *Tim.* 30 a 3-6 Philoponus notes that Plato's introduction of disorderly motion is not clear, *Contra Proclum* XIV.1 541.23-24.

In his subsequent attack on this interpretation of Plato's text, Proclus depends heavily on Porphyry and Iamblichus.[20] After his textual commentary (*in Tim.* I 387.5-391.4) he even adds a survey of four entire chapters from Porphyry's refutation of Plutarch and Atticus (*in Tim.* I 391.4-396.26).[21] From the commentary on *Tim.* 30 a 3-6 I select only the four passages which are reflected in the eleventh argument of the *De aeternitate mundi*.[22]

1.1 The generation of matter requires matter

The claim of Plutarch and Atticus that matter is co-eternal with the Demiurge and the Forms brings up for Proclus the question of the origin of matter, which he calls a much disputed question he has already discussed elsewhere.[23] According to Plutarch and Atticus, matter was not generated from any cause.[24] With a reference to Aristotle Proclus admits that matter is ungenerated[25] in the sense that matter is not composite, and inasmuch as it has not come to be out of another matter and will not perish into another matter.[26]

Here we recognize the crucial argument of §6: matter has not come into being, because this generation would require an anterior matter. It is interesting to note how Proclus arranges his arguments. In the *in Timaeum* passage (probably following Porphyry) he does not need to defend the eternity of matter because Plutarch and Atticus did not deny it. Therefore Proclus confines himself to a quick reference to the traditional arguments supporting this tenet, and then focuses on the status of matter among the causes. In our passage, on the contrary, the eternity of matter is the very issue: the Christians believe matter has a

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[20] Festugière II 252 n. 4 points out that even the arguments that Proclus does not attribute to Porphyry or Iamblichus may originate with them; see Theiler (1933) 14-17. Not without relish Philoponus, *Contra Proclum* VI.2 126.10-16, points out that Proclus merely copied many of his arguments in the *in Tim.* from Porphyry's **in Tim.* (fragments collected in Sodano [1964]; add Philop. *Contra Proclum* VI.17 172.5-20, see Smith [1993] fr. 172F).

[21] See fr. LI Sodano.

[22] These passages are, in the order in which they will be discussed: Procl. *in Tim.* I 384.5-7, 384.8-386.13, 395.10-396.26, and 394.11-395.10.

[23] *In Tim.* I 384.13-14, 283.28-30; as Festugière II 247 n. 3 notes, the reference is probably to *Mal.subs.* X 30-34.

[24] Cf. *in Tim.* I 384.3-4 ἀπ' αἰτίας ἀγένητος.

[25] In the context of Proclus' eternity argument it seems natural to take ἀγένητος as 'ungenerated' instead of 'ungenerable' (*pace* Judson [1987] *passim*).

[26] *In Tim.* I 384.5-7. Cf. Arist. *Phys.* 192 a 25-34; Diehl's reference to *Cael.* I.3 270 a 24ff was rightly rejected by Festugière II 247 n. 1.

beginning in time. Now Proclus puts Aristotle's argument at the heart of the entire discussion, with *concreatio* and the essential relation between matter and form as supporting arguments. Nevertheless, some reminiscences from the *in Timaeum* debate remain in our passage, as we shall see.

1.2 'Generated' means 'depending on a cause'

Following the *in Timaeum* commentary, we see how, after dealing quickly with the arguments in favour of the eternity of matter, Proclus points out that it is still open to debate whether matter is created in the sense of 'depending on a cause' (*in Tim.* I 384.8-12).[27] According to Proclus, Plato makes it clear that it is not the Demiurge who creates matter: at *Tim.* 50 d 2-4 the Demiurge as a father is contrasted with matter as a mother; at *Tim.* 52 d 3-4 the receptacle is said to be present before the generation of the universe. Moreover, at *Phil.* 23 c 9-10 Plato refers to the principles of Limit and Unlimitedness. For Proclus it is clear that Unlimitedness (ἀπειρία) is responsible for matter, which he regards as a manifestation of Unlimitedness.[28] The 'god' who is said to be the cause of Limit and Unlimitedness is taken to be the One;[29] if the One is the cause of Limit and Unlimitedness, matter depends on a cause after all, the One or Good.[30]

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[27] A similar question was raised by Porphyry in his *Timaeus*-commentary, see Porph. ap. Philop. *Contra Proclum* VI.17 172.5-15 (= fr. 172F Smith).—The tradition of matter being generated 'from a cause' is long and complicated. It seems that the Pythagoreans play an important role, judging from the famous Porphyrian quotation of Moderatus preserved in Simpl. *in Phys.* 230.34-231.24 (cf. T20 to be discussed below, Ch. 2 p. 123ff); cf. 181.7-30 (Eudorus of Alexandria; see Dörrie [1944] 27-28). Other sources are *Orac.Chald.* p. 201 Des Places (= Psellus *Hypot.Chald.Or.* §27): matter is πατρογένης; Iambl. *Myst.* VIII.3, c. 265.8-10 (p. 197 Des Places; this text is referred to by Procl. *in Tim.* I 386.10-11 when he ascribes the thesis to the Egyptians); Procl. *in Rep.* II 138.8-17 = Orph. fr. 66a (with Dodds 247 referring to Iambl. *Comm.math.* 12.22-14.17 [Festa]); Simpl. *in Phys.* 256.14-257.4. For a general appraisal of the problem of the generation of matter in Plotinus, see O'Brien (1991).

[28] See further Ch. 2 p. 77ff.

[29] See e.g. *in Tim.* I 385.18-19.

[30] For the usual interpretation of δεῖξαι in *Phil.* 23 c 9 as 'create' see e.g. Porph. ap. Procl. *in Tim.* I 393.23-27; Procl. *Mal.subs.* X 35, *Theol.Plat.* III.9 36.10-19 SW, compare *in Tim.* I 385.1 (ὑφίστησι), 385.18-19 (παρήγαγεν) (not Diehl's *in Tim.* I 267.20ff as Festugière II 248 n. 2 saw); *in Tim.* I 393.14-31, II 102.6-11: references to Plato reducing everything to one cause. On the entire issue see Festugière (1954) 32-53 with abundant sources.—For the role of πέρας and ἄπειρον see Ch. 2, p. 75ff.

In our §1-2 Proclus refutes the option that matter had come into being 'from nothing' (ἐκ μηδενός) because in that case the relation between matter and generation would be fortuitous and the creation of the universe would lack a firm basis. It seems unlikely that Proclus is here attacking the Christian notion of *creatio ex nihilo*, because that does not lead to these consequences. For it is obvious that the doctrine of *creatio ex nihilo* assumes that God is responsible for the necessary relation between matter and generation. In §2 Proclus discusses the alternative to 'from nothing', viz. that the relation between matter and generation is 'from a certain cause' (ἔκ τινος αἰτίας).[31] Therefore I suggest that Proclus interpreted 'from nothing' as 'from no cause whatsoever'. This interpretation is understandable in the light of the *Timaeus* commentary: for Proclus the question of the origin of matter is inextricably related to contemporary discussions about the question whether matter has an efficient cause. In the *Timaeus* commentary Proclus argues that it has, and he confirms his position in the eleventh argument of his *De aeternitate mundi*. However, in the context of an argument against the Christian creation *ex nihilo* these considerations seem to be rather out of place. After all, Christians are ready to admit that matter is 'generated by a cause': God created it.

1.3 The revision of the house analogy

Another important issue in the *Timaeus* commentary is the claim of Plutarch and Atticus that the world has a beginning in time. Porphyry countered this claim with an explanation of creation 'through being itself' (αὐτῷ τῷ εἶναι); after all, it is unacceptable that a divine entity would suffer change when starting to create.[32] Since the Demiurge is regarded as a mind (νοῦς) the only kind of production suitable for him

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[31] See *Aet.* XI 403.18-24: εἰ μὲν οὖν ἐκ μηδενὸς ἡ ὕλη ... εἰ δὲ ἔκ τινος αἰτίας.

[32] Cf. Hierocles **De prov.* ap. Phot. *Bibl.* 461 a 8-23, 463 b 30-38 for a discussion critical of God creating in time, also referring to his creating κατ' οὐσίαν (463 b 30). Cf. Procl. *in Tim.* I 390.10, 393.9-13, 395.10-396.26; see also 268.6-7, 321.10-11; *in Parm.* 768.20ff; *Aet.* IV 56.1-2, XVIII 605.5-606.9. Since the Demiurge is mostly regarded as a mind, his being coincides with thinking: he creates because he thinks, see *ET* prop. 174 (but he does not think in order to create: this would turn him into the Christian God who deliberately chose to create the universe, cf. Dodds 290). For the intimate relation between being, thinking and creating, see e.g. Trouillard (1958) 353, P. Hadot (1968) I 432-451. Cf. in particular Procl. *Aet.* XVI 560.1-563.9: a concise discussion of the notion of βούλησις in relation to the Demiurge's ordering of matter.

is thinking (νοεῖν).[33] In this context Proclus used the craft analogy of house-building.[34]

The use of craft analogies is of course well-known from Aristotle.[35] In particular, they serve to illustrate the relation between the four 'causes', and to highlight the teleological aspect of natural processes.[36] We have seen that for Proclus it is important that the relation between matter and generation is an essential one, and consequently he insists that the relation holds between matter *qua* matter and generation *qua* generation (§3). Therefore it seems that one Aristotelian text in particular is the source of Proclus' argument because it combines the means-end relationship with the relationship between matter and its function in nature.[37]

In *Phys.* II.2 194 a 21-b 15—discussing the question whether the science of physics should treat of form, matter or both—Aristotle uses a craft analogy as one of several arguments in support of his claim that physics should give a comprehensive account both of matter and form.[38] The argument is based on the relation of 'that for the sake of which' (= nature) and 'that for the sake of something' (= matter). These relata can be viewed in two ways: either the goal is the *production* of (suitable) material, in which case the material is the aim of the

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[33] Cf. e.g. *in Tim.* I 268.6-7, 321.10-11.

[34] The use of a craft analogy here might have been prompted in particular by the fact that Atticus called the creator 'the best artisan' (ἀριστοτέχνης), Att. ap. Eus. *PE* XV.6.12.7 Des Places. Though his critics stress the differences between the creator and a human artisan, Atticus may very well have had their *a fortiori* argumentation in mind in speaking about the *best* artisan. For the following, see also De Haas (1989).

[35] See e.g. Arist. *Phys.* II.7-8 esp. 198 b 12-16; *Metaph.* VIII.2 1043 a 14-21; *PA* I.1 640 a 15-19, 645 a 30-34.

[36] Cf. Fiedler (1978) esp. 170-179 and 168, where he suggests that Aristotle probably derived the house-building analogies from literary examples, whereas it is likely that the medical analogies were (also) rooted in his own experience, since his father was a physician. See also Bartels (1966) 2, 28-33 who concentrates on the applications of craft analogy in Aristotle's biology, esp. procreation; these applications gain interest when it is realized that Plato regarded the universe as a living being (ζῷον). On the significance of the craft analogy for Aristotle's teleology see Broadie (1990).

[37] Cf. S. Mansion (1969) 129.

[38] Aristotle too had defined matter as a non-accidental substrate, *Phys.* I.9 192 a 31-32. Compare also *Phys.* II.2 194 b 9: matter and form are relata, with *Cat.* 8 a 31-32: proper relata (under the correct description) owe their being to the relation in question; cf. De Rijk (1980) 48-50. For the use of the *qua*-operator in Aristotle see Cleary (1985) 17, 29-30; Van Rijen (1989) Ch. 8.

process;[39] or the goal is the *use* of suitable material, and the material, which is already assumed to be suitable (εὐεργός),[40] constitutes the means to reach that goal. These processes can easily be distinguished because in some cases different crafts are concerned with them. On the one hand there is the art of *producing* the material (the art of rudder-making), which demands knowledge of the material as such, together with the equipment and processes necessary to reach that goal. On the other hand there is the art of *using* the material (the art of the helmsman), which entails knowledge of the form. Notwithstanding the distribution over different arts, the helmsman directs the entire production process in virtue of his knowledge of the form and purpose of the rudder.[41]

Analogy is important in the case of matter: Aristotle stipulates that the notion of matter has to be envisaged by means of an analogy or some other indirect approach.[42] If we confine our attention to the analogy of house-building, we find that Aristotle, true to his metaphysical position where natural substances are at the focus of interest, applies the analogy to instances of more or less proximate matter.[43] In the texts where, according to some, Aristotle envisages prime matter, other techniques are used, e.g. subtraction (ἀφαίρεσις).[44] Consequently, we have to look beyond Aristotle for the combination of house-building

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[39] In fact, the material is the more limited *goal* of the workman's activity, for which it is, strictly speaking, accidental that the product will be used as a rudder. But since the further goal determines this more limited goal (the helmsman directs the production of the rudder-maker) it is possible to regard one and the same material under both aspects (viz. goal of its own production, means towards steering the ship).

[40] The word εὐεργός may be yet another indication for the provenance of the analogy: it is quite rare in Proclus and occurs always in this particular context concerning matter; see Procl. *in Tim.* I 329.26; 395.15-16; *Aet.* XII 466.18, 20; XIV 538-539 *passim*; cf. ἐπιτηδεία in 540.8.

[41] The differentiation of crafts along these lines together with the example of the helmsman originated with Plato, *Crat.* 390 d 1-2 (the helmsman); *Polit.* 259 e 8-9 (the architect directs the workmen). Cf. Fiedler (1978) 175 n. 1.

[42] Arist. *Phys.* I.7 191 a 7-12. Cf. Cook (1989), Owens (1969) esp. 207.—This Aristotelian tenet was often connected with Plato's note on the epistemology of matter in *Tim.* 52 b 2 μετ' ἀναισθησίας ἁπτὸν λογισμῷ τινι νόθῳ, see e.g. Tim. Locr. 94 b; Alex. *in Metaph.* 164.20-22, *Quæst.* I.1 4.9-11; cf. Ps.-Alex. *in Metaph.* 687.4-5. For Simplicius, see below p. 102.

[43] See *Anal.Post.* II.12 95 b 31-37; *Phys.* I.4 188 a 15-17, cf. VII.3 245 b 9-246 a 9; *Metaph.* 1043 a 14-16; *DA* I.1 403 b 1-16; *PA* 646 a 24-b 10; *GA* 730 b 4-8.

[44] *Metaph.* VII.3 1029 a 11-19; *Phys.* IV.2 209 b 9-11 (see T10). The debate concerning prime matter in Aristotle falls outside the scope of this book.

with a discussion of *prime* matter. Turning to Proclus again, we find that he attributes such an application of the analogy to Porphyry as part of a chain of arguments against Plutarch and Atticus.

Porphyry had used the analogy to illustrate the production of the universe, i.e. the realization of all forms in universal matter. This is understandable since the whole *Timaeus* is a craft analogy. Porphyry maintained that artisans use tools because they do not properly master their material. This is illustrated by the fact that they use these tools to render the material suitable (εὐεργός), not to induce the form into matter.[45] The form (or λόγος) enters matter from the art instantaneously (ἀχρόνως) as soon as the matter for it is ready.[46] Of course the Demiurge is an artisan of a higher order than his human namesakes. *A fortiori* his activity is not only instantaneous, but he does not need a pre-existing matter to realize the forms either, let alone tools—he only needs the Forms as paradigms.[47] For Porphyry it was impossible that Plato meant that the Demiurge created within time when even in the human crafts the form is realized instantaneously. Hence Atticus' claim is untenable.

This Porphyrian precedent explains Proclus' concern with instantaneous creation in the eleventh argument. Against Plutarch and Atticus Porphyry adapted the analogy so as to exclude the possibility that the forms were created in matter *in time*. In this way the analogy was able show the impossibility of matter being pre-existent and co-eternal with the Demiurge.

In his refutation of the Christian creation *ex nihilo* of matter Proclus developed the analogy further so as to suit the case of the generation of matter. If the activity of the artisans on the material does not yet concern the form, and if form and matter are essentially related, it

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[45] Incidentally, Porphyry does not mention a house but only speaks of boring (τρυπάω), planing (ξέω), and carving (τορνεύω), which seem to be several ways to prepare wood (perhaps an allusion to the original meaning of ὕλη, cf. Solmsen [1961]), probably not exclusively for use in a building. Proclus *Aet.* XI and Philop. *Contra Proclum* IX.14 also speak of planing (ξέω) but now with reference to stones which, fitted together, serve as matter for the form of a house. Stones and wood together are the stock examples of materials for house-building.

[46] Cf. Procl. *in Parm.* 844.4-11. Cf. Porph. ap. Procl. *in Tim.* I 395.21, II 102.6-11: ἀθρόως.

[47] Proclus *in Tim.* I 395.22-396.2 compares the effect of human φαντασία (shame provokes blushes, fear provokes paleness), and of the thoughts of demons, which work on their 'matter' without tools. For the Demiurge not needing matter, see also Hierocles **De prov.* ap. Phot. *Bibl.* 460 b 23-41, 463 b 30-38.

follows that matter as such does not exist before the forms are created.[48] This is brought out by Proclus' careful expression 'what is not yet matter', whereas in his report of Porphyry he speaks of 'matter' without further qualifications.[49] If matter as such is realized together with the forms, and if the forms are created instantaneously, it follows that matter is created instantaneously too. Therefore, to speak of universal *matter* implies that it already contains all forms, i.e. that the universe exists.

It is interesting to note how the house analogy is used by Porphyry against those who believed in the eternal pre-existence of matter, and by Proclus against those who believed in the creation of matter. The interdependence of matter and each particular form is the key to the understanding of both arguments. First those who accept the eternity of matter are urged to accept the co-eternity of all forms and matter. This *co*-eternity excludes the *pre*-existence of matter that these philosophers had adopted. In this case the notion of *concreatio* is sufficient to reach the desired conclusion. Those who accept the instantaneous creation of forms[50] are urged to accept the instantaneous creation of both matter and forms together. Now *concreatio* is not sufficient to prove the eternity of the world, and Proclus realizes that a separate proof of the eternity of matter is required. Hence he revises his argument by shifting the emphasis to Aristotle's proof of the eternity of matter (§6), which now becomes the key to the argument as a whole.

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[48] This argument could also be used against Plutarch and Atticus though as far as I know it is not reported in the *in Timaeum*. From Philop. *Contra Proclum* XIV.3 546.5-547.19 we learn that Porphyry believed Plato to mean that bodies without order are the matter of the universe because the Demiurge took all that was *visible*, and matter containing only the traces of the forms could not be regarded as corporeal (and hence visible) yet. If so, Porphyry has no reason to speak of 'what is not yet matter', which is reflected in Proclus' report. Philoponus uses this discrepancy between Porphyry and Proclus to undermine the significance of the *Timaeus* account, *Contra Proclum* XIV.3 547.19-549.4.

[49] Contrast *Aet.* XI 404.8-9: εὐεργὸν ποιοῦσιν οἱ τεχνῖται τὴν μήπω οὖσαν ὕλην with *in Tim.* I 395.15-16: πρὸς τὸ εὐεργὸν ποιῆσαι τὴν ὕλην.

[50] Combining Plato's account of immanent forms (*Tim.* 50 c 4-5) and Aristotle's hints in e.g. *Metaph.* VII.15 1039 b 20-27 and VIII.5 1044 b 21-22, later thinkers usually accepted that immanent forms come into being without generation and perish without corruption (see Sorabji *TCC* 247 and notes). Philoponus *Contra Proclum* IX.11 364.5-365.9 seizes the opportunity to confront Proclus with his own words from *in Tim.* V in order to 'prove' the corruptibility and hence creation of immanent forms.

Only if matter is proved to be eternal may *concreatio* serve again in an argument in favour of the eternity of the world.

1.4 The significance of disorder

Proclus' reference to order and disorder reflects yet another issue in the debate about the correct interpretation of the *Timaeus*. In *Tim.* 30 a 3-6 Plato argued that the Demiurge created order in something described as 'all that is visible—not at rest, but in discordant and unordered motion'. Plutarch and Atticus had identified this entity as matter and used the passage as proof that according to Plato matter was a principle equivalent to the Demiurge, existing prior to the generation of the cosmos.[51]

Porphyry identified chaos with the elements—which, he believed, had been created by the Demiurge at an earlier stage—and countered that Plato had meant to distinguish in thought the *existence* of the visible bodies (i.e. the elements) from their *order*.[52] Further on in the *Timaeus* Plato was to make a new distinction by mentally envisaging an earlier stage of the creation process, the generation of the elements themselves (*Tim.* 53 c 4).[53] Porphyry was convinced that the creation story of the *Timaeus* served only expository purposes.[54] He considered

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[51] Compare the similar view of Alexander of Aphrodisias, also endorsed by Harpokration and Galen: ἀταξία exists eternally before the cosmos is created in time (Alex. ap. Simpl. *in Cael.* 311.29-312.9; ap. Simpl. *in Phys.* 1121.28-29; ap. Philop. *Contra Proclum* VI.27 216.12-23, 222.11-13). For more details and sources, see Baltes I 70-81. Baltes I 147 rightly notes that the Neoplatonists' criticism is 'unscharf' inasmuch as Plutarch and Atticus did in fact maintain that matter, though equivalent in *time* (co-eternal), ranked lower than the Demiurge on the *ontological* scale.

[52] See Porph. ap. Philop. *Contra Proclum* VI.14 164.18-165.6 = fr. XLVII Sodano; XIV.3 546.5-547.19; ap. Procl. *in Tim.* I 366.13-17.

[53] So rightly Baltes I 155 n. 270 as against Diehl *app.crit. ad* 383.13 and Festugière II 245 who refer to *Tim.* 31 b 4ff, 36 d 9ff.

[54] Porph. ap. Procl. *in Tim.* I 382.12-383.22 (Baltes I 148-150 has shown that in 382.20-383.1 Proclus combines Porphyry with Iamblichus in his argument in support of the διδασκαλίας χάριν principle, for the sources of which see Baltes I 211 n. 26); Porph. ap. Philop. *Contra Proclum* XIV.3 546.5-547.19 (cf. fr. 48-50 Sodano); cf. *in Tim.* II 101.5-7 where Proclus refers to the same idea without referring to Porphyry. Alexander rejected this interpretation, see Alex. ap. Philop. *Contra Proclum* VI.27 216.12-23.—Plato's account could only be reconciled with the eternity of the world if references to an actual creation in time were played down (though perhaps *Tim.* 69 b 8-c 3 could be used to support this view; see the modern debate on the same issue, conveniently summarized in Tarán [1971]). But Porphyry and Iamblichus recognized that the existence of the Demiurge could be played down on the same principle of interpretation, and were careful to add the rival interpreta-

it impossible that disorder actually preceded order. For it is out of the question that God, who wishes order in virtue of his being, is responsible for disorder. If matter itself were responsible for the disorder, it escapes us why it would be ordered now. Matter's suitability to receive forms does not explain anything because God is responsible for just this suitability: God created order 'after' the unsuitability had ceased to be. If neither God nor matter can be held responsible for an actual stage of disorder, the entire argument cannot but serve expository purposes, viz. to show the difference between generation and order, with the implication that bodies cannot order themselves but need a divine cause.

Proclus does not entirely agree with this account. He endorses the solution of a theoretical distinction between being and order[55] but he identifies chaos with the stage of the traces of the elements (*Tim.* 53 b 2), which, according to Proclus, testify to matter's suitability for receiving the order the Demiurge is about to create.[56] Still according to Proclus, the matter that the Demiurge starts out with was not created by him at an earlier stage (as *Tim.* 52 d 3 shows), but was created by higher causes, viz. the One, Unlimitedness, Intellect, Life etc.[57] According to Proclus' *Elements of Theology,* higher causes are to a higher degree causative of a given product than its immediate cause.[58] They can be said to work before lower causes as well as together with them;[59] besides, their influence extends further down the hierarchy than

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tion of γενητός as dependent on a cause as well as the idea of perpetual generation, see Procl. *in Tim.* I 277.11-14, 290.3-16 with Baltes I 171. Philoponus, by the way, is eager to point out a contradiction between Porphyry's explanations of γενητός as *both* 'dependent on a cause' *and* 'composed of matter and form'. The latter explanation apparently originated with Porphyry; cf. Procl. *in Tim.* II 117.16-18.

[55] *In Tim.* I 394.25-31; *Aet.* XIV 540.11-15; cf. Philop. *Contra Proclum* XVI.4 576.26-577.4. On the role of theoretical distinctions in defining matter, see further section II.2.

[56] See Proclus' correction of Porphyry's account to this effect in *in Tim.* I 383.1-22, with Baltes I 154-157, II 94; cf. *in Tim.* I 387.12 (for an interpretation of this text differing from Festugière II 252 n. 1, I. Hadot [1978] 82 n. 20, and Baltes II 83 n. 268 + 89-90, see Ch. 2, p. 96 with T18). However, from *in Tim.* I 386.13-387.5, 388.9-28; II 99.9-15; III 226.13-18 one might gather that Porphyry's presentation is also correct, inasmuch as the Demiurge does create unity and form—albeit in virtue of the power of higher causes inherent in himself. Cf. Baltes II 86, 92, n. 310 pointing out that this approach of telescoping hypostases is Porphyrian.

[57] *In Tim.* I 385.9-17, 386.13-387.5. Cf. *Aet.* XIV 538.2-540.17 which is discussed in the next section.

[58] Cf. Procl. *ET* prop. 56.

the influence of lower causes.[60] Therefore it is quite correct that Plato presents disorderly moving matter as already present when the Demiurge begins to work: it is the product of causes higher than the Demiurge.[61] The Forms cause the traces of the elements, which in turn are responsible for the disorderly motion of matter.[62] This account supports the eternity of matter through its relation to higher causes and at the same time offers an alternative for the evil soul of Plutarchus and Atticus.

Since the Demiurge creates images of the Forms in matter, the identification of order with the presence of forms readily presents itself. Moreover, we know that Proclus interpreted *Tim.* 50 c 4-5 about 'the things that enter and leave' the receptacle, as referring to immanent forms.[63] The Demiurge creates these images of the Forms in the

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[59] Cf. Procl. *ET* prop. 70; Dodds *ad loc.* p. 238 with n. 1 points out that a temporal and not merely a logical priority is meant, at least in the context of effects in the sensible world. He compares the development of a child in the womb, where rationality enters at a late stage, when being and life are already present (he refers to Arist. *GA* 736 a 35ff.). In the context of the 'creation' of the cosmos as a whole, however, immediacy must prevail.

[60] Cf. Procl. *ET* prop. 57, 71-72; *in Tim.* I 386.25-27.

[61] Proclus is able to allow a very literal interpretation of παραλαβών (*Tim.* 30 a 4): the Demiurge 'takes over' chaotic matter from higher causes, cf. *in Tim.* I 387.30-388.9, III 230.13-25. Plato's myth in *Polit.* 272 b ff. envisages the converse: the demiurgic activity is withdrawn and chaotic movement remains, cf. Procl. *in Tim.* I 389.9-15; *Aet.* XVIII 606.9-607.6. It should be noted that in this context chaotic matter is described as εἰδοπεποιημένον πρὸ τῆς τάξεως: the traces are already considered as forms; contrast Porph. ap. Philop. *Contra Proclum* XIV.3 547.9.

[62] *In Tim.* I 387.14-30. Cf. *in Parm.* 844.22-845.15, *in Tim.* I 270.8-26, 419.26-30. This is an elaboration based on *Tim.* 28 a 6ff, c 5ff combined with 52 d 2ff, 69 b 1-5. Cf. Orig. *Princ.* p. 55.4 Koetschau. Cf. the πολυποίκιλος ὕλη from *Orac.Chald.* 34 Des Places (= Procl. *in Tim.* I 451.19-22) quoted *in Tim.* I 388.21; cf. *in Tim.* I 451.19. Baltes II 92-94 notes a tension between *in Tim.* I 387.14ff and *in Tim.* I 389.5-16 where the irregular motion is said to be caused by a *natural* impulse. He concludes that this must be Porphyry's interpretation—the motion of the elements (= πᾶν ὁρατόν) is caused by their nature—which was left to stand besides Proclus' own 'aus Rücksicht auf Porphyrios' (94), which is hard to believe. Perhaps Proclus attributes a natural motion to the *traces* of the elements already, for which he might have drawn on *Polit.* 273 b 4-c 1; then there is no need to bring in Nature nor to note a contradiction between Proclus' two accounts of πᾶν ὁρατόν.

[63] Procl. ap. Philop. *Contra Proclum* IX.11 364.5-365.3 = fr. *in Tim.* V Diels. There is some discussion among modern commentators whether the 'entering and leaving things' are Form-images or complete sensible entities, see e.g. Algra (1995) 95-97; and below p. 51-52 with n. 10.

receptacle and by doing so he creates order, i.e. (with the usual ambiguity of κόσμος) the universe.[64]

By now it will be clear that in formulating the eleventh argument against the Christians Proclus used the same material he used in his *Timaeus* commentary when discussing the issue of the generation of matter. In fact he approaches the issue from the angle of the interpretation of Plato's *Timaeus* because he includes two aspects of the polemics against Plutarch and Atticus that are not appropriate here. First, he takes *ex nihilo* as indicating the absence of an efficient cause, and secondly, he argues for the *concreatio* of form and matter. However, the Christians do not deny the presence of an efficient cause, nor do they doubt *concreatio*. Proclus rearranged the other arguments so as to apply to the new issue, the eternity of matter versus its alleged creation in time. This rearrangement of arguments confirms that Proclus wrote his treatise about the eternity of the world with the Christians as opponents in mind, even if he did not himself add 'against the Christians' to the title of his work.[65]

2 *The pivotal role of* Aet. *XI*

The eleventh argument is not an isolated chapter in Proclus' defence of the eternity of the world. On the contrary, it is a cornerstone which in one form or other plays a role in many of the arguments in Proclus' *De aeternitate mundi*. The following survey is intended to illustrate this fact, and may serve to underline the significance of Philoponus' criticism by way of contrast.

The twelfth argument (*Aet.* XII 466.2-23) takes up the result of the eleventh argument. Proclus maintains that for the universe to have a beginning or end in time, either the Demiurge must be incapable, or matter unsuitable. However, the Demiurge is eternally capable and self-sufficient, and matter is eternally suitable. Hence the cosmos is eternal.

In *Aet.* XIV 538.2-540.17 Proclus discusses the status of chaotic matter from the angle of time. First, he argues that whether the Demiurge creates matter or merely renders a pre-existent substrate suitable (εὐεργός) makes no difference: in both cases he can be said to create (ποιεῖν) matter. For 'matter' (ὕλη), in contrast to 'substrate' (ὑπο-

[64] See *in Tim.* I 381.26-382.12, discussed above, for this relation between forms and order.

[65] See above Introduction p. xvii n. 32.

κείμενον), denotes something which is suitable, i.e. possesses the potentiality required for generation. Proclus considers two possible explanations for the origin of the traces of the elements:

1. the Demiurge first created matter suitable for generation, and then he created the traces, making matter unsuitable again. This of course is absurd: why would he destroy the suitability for order he had created himself? (539.1-13)
2. the Demiurge created matter; another intelligible divine cause created the traces; the Demiurge established order. But why would the Demiurge wait for disorder to come about instead of proceeding to create the cosmos, as if he were unable to bring the suitable (τὸ ἐπιτήδειον) to its perfection if it had not become unsuitable (ἀνεπιτήδειον) first?[66] Besides, it makes no sense that the Demiurge would make matter suitable merely for receiving the traces (539.14-27).

It is noteworthy that Proclus does not mention the explanation he gave in his *in Timaeum*, viz. that the One creates matter, the Model creates the traces, and that the Demiurge establishes order. His discussion is probably accommodated to the polemical situation: his opponents here, the Christians, invest their first principle (God) with the power to create matter. The absurdities in *Aet.* XIV are generated by Proclus' insistence that the Demiurge is responsible for matter before the traces come in.

From these absurdities Proclus concludes that no progress in time could have occurred either between the creation of matter and that of the traces, nor between them and the supervenience of order. Since matter is ungenerated, the three stages all co-exist eternally; they can be distinguished only in thought (τῇ ἐπινοίᾳ). When there is order, the cosmos exists; therefore the cosmos is eternal (539.27-540.17).

The fourteenth argument is not the only one that supports the co-temporality of the first stages of creation. In *Aet.* XVI 560.1-563.9 Proclus argues that God's wish to establish order (*Tim.* 30 a 5-6) and the wish to maintain it (*Tim.* 41 b 4-6) must coincide in time, lest we assume change within God. The first wish originates with his goodness—which is the topic of *Aet.* VI 119.14-120.5, cf. *Tim.* 30 a 2—the second from his not being evil (*Tim.* 29 e 1-30 a 7, 40 b 4).[67] Since God's wish works eternally in virtue of his being, maker and product

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[66] See below Ch. 3, p. 153ff. for the significance of the notion of ἐπιτηδειότης in Philoponus.

[67] By nature, God has merely one desire, to create order, from which merely one wish comes forth (*Aet.* XVI 562.1-563.5).

are eternally co-existent. Consequently, the annihilation of disorder and the maintenance of order are co-eternal. This precludes a stage of disorder *before* order in time (561.12-22).[68]

In the eighteenth argument a similar conclusion is established from the divinity of the Demiurge (*Tim.* 30 b 8, 34 a 8 etc.):[69] divinity means immutability, so God cannot change from not creating to creating or vice versa; his demiurgic activity is eternal, and so is the cosmos (*Aet.* XVIII 604.14-606.9). The account of the *Timaeus* as well as its converse in the *Politicus* (273 a 4-e 4), where order reverts to disorder again as the Demiurge leaves the scene, must be taken as theoretical presentations which Plato, in his wisdom, employed to be able to envisage both order and disorder. In fact, God and hence order are never absent; the cosmos is eternal (606.9-607.20, 608.22-609.18).[70] Besides, only when the cosmos is well-ordered throughout the whole of time can it be considered a proper image of the eternity of the Model (607.22-608.11), a divine living being (608.11-22).[71]

Thus the cogency of the chapters listed above hinges on the eternity of matter. All arguments supporting the *concreatio* of matter, disorderly movement and/or order are reduced to the eleventh argument on matter.

Philoponus was well aware that Proclus' eleventh argument was a cornerstone of the *Eighteen arguments*. In his comments on *Aet.* XII he immediately refers to his eleventh book for a refutation of the eternity of matter (*Contra Proclum* XII.1 467.19-21). In *Contra Proclum*

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[68] In fact, as Philoponus points out (*Contra Proclum* XVI.5 585.15-24), the annihilation of disorder is irrelevant if it never actually existed because God wished and established order from eternity. If for this reason there is no beginning of order *after* disorder (or no end of order *before* disorder), still order might have a beginning (or end) in time without disorder preceding (or following). Cf. *Aet.* XVIII 607.6-23 where Proclus allows this, if only to defend the fact that the theoretical accounts of the *Timaeus* and the *Politicus* (see below) were necessary to be able to envisage any disorder at all. Cf. Procl. *Aet.* IX 314.2-11.

[69] Cf. *Aet.* III on the invariable actuality of the Demiurge as such; *Aet.* II on the eternal actuality of the Model and hence of its image, the cosmos.

[70] Cf. Procl. *Aet.* XVII 591.9-11 where the same conclusion is reached after an analysis of the terms ungenerated/imperishable and unordered/ordered. In *Aet.* X 381.14-382.14 Proclus claims that the elements must have been in their proper places even before the ordering of the universe, which, on a temporal reading, would entail order before order; since this is impossible, order (= cosmos) is eternal.

[71] Cf. Procl. *Aet.* XV 549.7-550.24 on the relation between Model and Image in terms of eternity *ab utraque parte,* which again precludes the actual co-existence of order and disorder.

XIV.2 544.14-546.2 he explicitly states that the argument in XIV actually turns on the alleged eternity of matter, which, he claims, is refuted in book XI. Philoponus rightly points out that the co-existence of matter, traces (disorder), and order does not lead to the conclusion that the universe is eternal.[72] Also in his comments on the eleventh argument Philoponus states that argument XI as a whole (including *concreatio*) is inconclusive as long as the eternity of matter cannot be sustained (*Contra Proclum* XI.9 446.21-447.7).[73]

We may conclude that Philoponus' comprehensive attack on Proclus' notion of matter was motivated not only by the eleventh argument itself but also by the importance of the eleventh argument for Proclus' work as a whole. Philoponus does not only reject the notion of matter employed by Proclus (*Contra Proclum* XI.1-8), but he also refutes Proclus' crucial argument, which turns on the Aristotelian doctrine that matter would need an anterior matter in order to come into being (*Contra Proclum* XI.9-15).

II PHILOPONUS' PRESENTATION OF THE *STATUS QUÆSTIONIS* CONCERNING MATTER (*CONTRA PROCLUM* XI.1-2)

In view of the significance of the argument in favour of the eternity of matter, it is not surprising that Philoponus launches a full-scale attack. Prior to a refutation of Proclus' eleventh argument he considers it appropriate to raise the fundamental question, 'what is the matter that all

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[72] This shows that there is no need for him to withdraw his earlier rejection of a literal interpretation of the *Timaeus* as far as a pre-existing chaos is concerned in *in Phys.* 575.7-11, *pace* Judson (1987) 180.—In the third and last chapter of his refutation of XIV Philoponus throws doubt on Proclus' interpretation of *Tim.* 30 a 3-6 by citing Porphyry's views (for which see above, p. 14-15) = fr. XLVIII + L Sodano. Here a temporal interpretation makes no sense either, Philoponus adds, and though an interpretation in terms of instantaneity might be acceptable, it is not conclusive as to Plato's alleged conviction that the cosmos does not have a beginning. Philoponus refers to *Contra Proclum* VI for his own interpretation of Plato's *Timaeus*. This book, together with IX and XI on form and matter respectively, constitutes the backbone of the debate about the eternity of the world. Cf. Ch. 6 p. 283-284.

[73] Besides, in his paraphrase of argument XIV (*Contra Proclum* XIV.1 541.7-15) Philoponus points out that the issue of the relation between matter, traces of the elements (= disorder) and order is irrelevant to the problem of the eternity of the world, because it arises entirely from the doctrine of Plato's *Timaeus* and Proclus' own interpretation of that work.—Incidentally, Philoponus' elucidation of the fourteenth argument (*Contra Proclum* XIV.1 541.7-544.13) makes a perfect summary of Proclus' commentary on *Tim.* 30 a 3-6. For Proclus' argument, see above, T1.

physical things have as their common substrate'[74]—an issue he had promised to deal with earlier.[75]

The first two chapters of this digression (XI.1-2) are devoted to what Philoponus describes as the opinion of Plato and the most renowned philosophers of old (407.23-24), among whom we have to count at least the Pythagoreans (410.1). The Stoics occupy a position of their own because they include three-dimensionality in their notion of matter (410.1-2). In XI.1 Philoponus provides a general description of the *communis opinio* and in XI.2 he adds the main arguments in support of this view. As already noted in the Introduction, Philoponus subscribed to this very doctrine of matter in earlier work although here it is only the starting-point for a fundamental attack. Since the new definition of matter is built on the ruins of this theory, let us have a closer look at both the theory and its demolition.

1 The communis opinio *concerning matter (XI.1)*

In *Contra Proclum* XI.1 Philoponus ascribes to his predecessors and contemporaries an elaborate stratification of the bottom layers of the physical world. Combining XI.1 407.23-409.20 with its recapitulation in XI.1 409.20-410.1, I would summarize the theory as follows:

1. The first substrate is incorporeal, formless matter (ἀσώματον τὴν ὕλην καὶ ἀνείδεον), also designated as prime matter (πρώτη ὕλη) or matter as such (ἁπλῶς ὕλη). Many people maintain that this matter is also eternal, because it is devoid of all generation, corruption or any change whatsoever.
2. Coupled with quantity (τὸ ποσόν)[76] this incorporeal matter constitutes 'the three-dimensional' (τὸ τριχῇ διαστατόν), also designated as unqualified body, body spoken of as such (ἄποιον τε καὶ ἁπλῶς λεγόμενον σῶμα), or second substrate after matter.[77]

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[74] *Contra Proclum* XI.1 407.20-21: τίς ποτέ ἐστιν ἡ κοινῶς ἅπασι τοῖς φυσικοῖς ὑποκειμένη ὕλη.

[75] Cf. *Contra Proclum* IX.11 345.21-25, IX.13 368.10-16.

[76] For πρώτη ὕλη plus τὸ κατὰ τὸ ποσὸν εἶδος elsewhere in Philoponus see e.g. *in Phys.* 39.2, 93.7-8, 559.9-11 (see T3), 687.33 (see T5); for ποσωθεῖσα ὕλη: *in Phys.* 516.22-25, 520.21, 621.22-23.

[77] For the expression δεύτερον ὑποκείμενον see e.g. *in Phys.* 156.16, 190.23-24 (see T55), 225.14, 579.4 (see T4); *in Cat.* 65.18, 83.17. Wolff (1971) 117-119 misleadingly refers to Porphyry's use of the expressions 'first and second substrate' (ap. Simpl. *in Cat.* 48.11-16; see fr. 55F Smith). Philoponus clearly means a level between prime matter and the elements which is second after the first substrate, prime matter (cf. *Contra Proclum* XI.1 409.23-24 τὸ δεύτερον ... μετὰ τὴν ὕλην ὑποκείμενον). Porphyry's second substrate is illustrated by 'e.g. Socrates, or the

This body-as-such, defined by the three dimensions, is a bulk (ὄγκος) undetermined as to size; the differentiae of the large and small provide further determination.[78] The nature of body is to be distinguished from its definite size as the nature of a genus is distinguished from its differentia. Just as no genus can be thought to exist as *not* actually determined by some differentia, body never exists without definite size. Most Stoics refer to 'the three-dimensional' when they speak of matter.

3. When quality (ποιότης) supervenes on this unqualified body, the nature of the elements is constituted. For instance, when warm and dry supervene, fire comes into being; warm and wet generate air, and so on.

   The four elements are not matter as such (ἁπλῶς ὕλη) but relative or more proximate matter (πρός τι ὕλη, προσεχέστερον). They are relative to the composite bodies (σύνθετα σώματα) which come into being when the four elements combine. These composites in their turn become matter in relation to other things, e.g. sperm and menses become matter for an animal.

This presentation of the views of Plato, the Pythagoreans, and the Stoics at once raises the question to what extent we can verify its credentials. Though all this is evidently not Plato, Pythagoras or the Stoa as we know them, it seems that Philoponus intends to describe opinions (or at least a blend of opinions) actually held. What is more, in the context of the *Contra Proclum* this theory will have to correspond at least roughly to Proclus' doctrines, or the refutation of it would be pointless. In his commentary on *Timaeus* 30 a 3-6, however, Proclus did not discuss this stratification of matter nor did three-dimensionality

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bronze' i.e. higher level composites. Hence Wolff's suggestion (*l.c.* p. 117) that Philoponus' earlier theory is an indirect confrontation with Porphyry cannot be maintained. Cf. Wildberg (1988) 211 n. 86. The commentators regard the expression 'second substrate' as Peripatetic; it can be traced back to Alexander, see Simpl. *in Cael.* 134.10, 576.8, 599.5, cf. Wildberg *o.c.* 211 n. 85.

[78] See esp. *Contra Proclum* XI.1 408.6-9: [ὑποτίθενται] αὐτὸ μὲν γὰρ τὸ σῶμα καθ' αὑτὸ μόναις ταῖς τρισὶ διαστάσεσιν ὁριζόμενον ὄγκον εἶναί τινα ἀόριστον, ὁρίζεσθαι δὲ τῇ τοῦ μικροῦ τε καὶ μεγάλου διαφορᾷ, which I would translate thus: 'They posit that body in itself, which is determined by the three dimensions only, is a certain volume without determination, but is (further) determined by means of the differentia of the small and large.' It seems that ὁρίζεσθαι as 'bounded by', though possible with ὁριζόμενον, seems on the whole less suitable. Body is essentially characterized by having three dimensions, now regarded as a generic feature, and distinguished from its differentia size, which provides (part of) the determination which body as such does not have. For the possibility of an allusion to the Platonic large-and-small (τὸ μέγα καὶ μικρόν), see below p. 134-135.

have the role we find described here. Besides, the history of three-dimensionality in later Greek philosophy is still largely to be written. Since a proper understanding of this aspect of the *communis opinio* on matter is necessary to evaluate Philoponus' innovations, a preliminary survey of this issue will be attempted in Chapter 2.

In many details Philoponus' presentation of the theory of matter announces the direction his refutation is going to take. For instance, he goes to some length to explain the relation between genus and differentia which features in the description of the second level—his own candidate for prime matter—and which he will use to refute an objection further below (*Contra Proclum* XI.4). He inserts an elaborate illustration of this point (408.9-409.3): the nature of 'animal' is defined by 'endowed with soul and sense perception' and is thus, according to the characteristic account of its nature (κατὰ τὸν ἴδιον τῆς φύσεως λόγον), to be distinguished from the differentia 'rational–irrational'.[79] Nevertheless, no animal can be envisaged existing (ἐν ὑπάρξει) without one of its own differentiae. Physical genera that have their being 'in the many' do not exist on their own, but are always taken together with some species (εἶδος): each animal is either rational or irrational. Again, there can be no irrational animal in existence without being a horse, dog etc. The reason Philoponus provides is that we are dealing here with relational entities (τὰ πρός τι), as is clear from the fact that the abolition of genera abolishes the species and vice versa.

The distinction between genus and differentia in the *account*[80] of the nature is absent as far as the *existence* of that genus in the sensible world is concerned. There the genus is always actually determined by differentiae all the way down to the particular. Philoponus indicates that he means *physical* genera, i.e. universal genera inasmuch as they are 'in the many' (ἐν τοῖς πολλοῖς). Only this kind of genus can be said to have an essential relation with the species it helps constitute. The careful delineation of this kind of universal genus assumes that

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[79] It is noteworthy that two contradictory characteristics are treated as one differentia, e.g. *Contra Proclum* XI.1 408.12, 409.1-2. In the case of 'the large-and-small' the unity of Plato's principle may exert some influence here. On the role of the differentia in Philoponus' account of matter, see Ch. 4.

[80] Here the expression λόγος τῆς φύσεως seems to point to the *account* of the nature or essence rather than to the *formative principle* which is identical with the φύσις. As is well-known, λόγος may conveniently (or confusingly) combine the corresponding epistemological and ontological perspectives.

there are other universals which *are* self-subsistent and hence not dependent on a relation with their species. These are the universals 'before the many' (πρὸ τῶν πολλῶν): the Platonic Forms as they found a home in the Neoplatonic universe at the levels of Mind and Soul. These genera are different again from the universals 'after the many' (ἐπὶ τοῖς πολλοῖς), the universal concepts that rational human beings generate in their minds from their perception of particulars by the senses. This triad of universals ingeniously incorporates both Platonic and Aristotelian universals. Neoplatonists usually hold that the universals 'after the many' are merely unreliable images that only serve to trigger in our mind the rediscovery of the sparks of the Forms that are present there. This is one step in the human reversion to the One: it is the Neoplatonic version of Plato's recollection theory.[81]

From the present chapter it is clear that the universals 'in the many' are essentially interdependent for they are said to belong to the class of relatives. I presume that we are in fact dealing with the so-called constituents of essence (συμπληρωτικὰ τῆς οὐσίας) which play an important role in the ancient commentators.[82] In general, the theory is that the instantiations of all relevant universals together make up the essence or form of a fully differentiated particular. Therefore the theory has been labelled 'bundle theory'.[83] The problem with such a theory is to find an explanation for the unity of the bundle: why do the constituents keep together? Judging from Philoponus' explanation one solution might have been to appeal to the Aristotelian type of interdependence or essential relativity: at this level genus and species *mutually* abolish each other when one of them is taken away.[84] Universals 'before the many', on the contrary, will remain unaffected by these changes.

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[81] Some examples of this Neoplatonic treatment of acquiring universals (which I hope to discuss on another occasion) are Herm. *in Phaedr.* 171.4-30 Couvreur *ad* 249 b 5-6, Olymp. *in Phaed.* XII.1 Westerink, Procl. *in Eucl.* 50.16-51.13, Simpl. *in Cat.* Proem 12.1-13.11, *in DA* 276.28-277.10. I owe the first three references to Richard Sorabji. For a general introduction to the topic, see Lloyd (1956) 59-64, Benakis (1982).

[82] In book XI of the *Contra Proclum* the terms τὰ συμπληρωτικὰ τῆς οὐσίας or τοῦ εἴδους occur in XI.2 411.25; XI.5 423.5; XI.6 425.20-21; XI.7 426.29, 427.19; there are 32 occurrences in the whole of *Contra Proclum*. For the relation between these 'completers' and differentiae, see further Ch. 4, p. 198ff.

[83] For which see Sorabji *MSM* Ch. 4; Lloyd (1990) 45-46 rectifies earlier statements of his in Lloyd (1956) 158 and emphasizes that in the commentaries on Porphyry's *Isagoge* the term ἄθροισμα is used to denote the particular *as such*.

[84] From an Aristotelian point of view one would expect that a genus is not abolished by the abolition of one of its species, provided there are others. Ultimately, of

We shall see further below[85] that Philoponus employed these Neoplatonic distinctions to define his own notion of body as prime matter, and to restore to the concept of matter some of its Aristotelian significance. The ontic status of the differentia is the subject of *Contra Proclum* XI.5, to be discussed in Chapter 4.

Another area where Philoponus is preparing his own ground is in the treatment of 'the three-dimensional' which constitutes the second level. In Greek 'the three-dimensional' (τὸ τριχῇ διαστατόν) can designate both the feature of three-dimensionality and the possessor of that feature as such.[86] At *Contra Proclum* 408.2-3 Philoponus makes clear that 'the three-dimensional' is the name for prime matter coupled with generic quantity, i.e. a composite, not the feature of three-dimensionality taken separately. However, as soon as Philoponus explains that three-dimensionality is the essential characteristic of body-as-such (408.6-8), 'the three-dimensional' may also refer to simple three-dimensionality taken as such. Therefore this new definition of prime matter invites the objection that a form cannot underlie forms, which is the issue of *Contra Proclum* XI.7 (see Chapter 5).

Concerning the third level in this stratification two facts should be noted: since the elements are presented as the combination of unqualified body with qualities, the proximate matter for the elements is not prime matter but unqualified body. This means that prime matter has lost its traditional role of substrate in the change of the elements into each other. This will prove to be a key issue in Philoponus' new definition of matter: if no physical change is more fundamental than elemental change, prime matter as traditionally conceived serves no purpose in physics.

Secondly, the products of the combination of the elements are labelled 'composite bodies', which implies that the elements can still be described as 'simple bodies' as they used to be, notwithstanding the two layers of composition which precede them. Two considerations seem relevant here: first, the elements are of course simple inasmuch as they are the principles of their mixtures. Their simplicity from that point of view does not contradict the composition that is suggested by

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course, all will depend on the existence of particulars that instantiate those universals, which is their only way of 'being'. From a Platonic point of view Forms certainly do not depend on the existence of species (or particulars) for their being. The interdependence employed here harmonizes both approaches.

[85] See p. 41f.

[86] Cf. Wildberg (1988) 212, Sorabji *MSM* 24 n. 7.

the theory. Secondly, only from the elements onwards are we dealing with real physical things that perform the function of matter in relation to more complex entities: they are the first relative matter (πρός τι ὕλη). Or, to state the same view differently, in the phrase 'unqualified body' 'body' refers to nothing but three-dimensional extension.[87] In 'simple body' as a designation of the elements, 'body' refers to the more familiar natural, sensible body, which only enters the scene at this level. Elements are the least complex occurrences of the latter type of body. As Philoponus points out, the lower levels of unqualified body and incorporeal matter are to be regarded as products of theoretical analysis only. This view of prime matter, which we also encountered in Proclus, entails that the position of undetermined prime matter at two removes from perceptible reality is quite hazardous.

2 Theoretical distinctions

This brings us to a crucial aspect of Philoponus' presentation of the received opinion on matter (*Contra Proclum* XI.1 409.8-18): one should realize that the order (τάξις) as presented here is merely conceived hypothetically in the mind, and is designed to unveil the nature of things. Surely, it does not make sense to conceive of the substrate as something that is able to exist without forms or qualities. Whatever matter is, Philoponus assures us, God at once creates *formed* matter (εἰδοπεποιημένη ὕλη), for matter and form are related as means to end.

Philoponus adds a clear reference to the principle of *concreatio* we encountered in Proclus' eleventh argument (409.15-16). This reference suggests at least some of the rationale behind the theory of matter presented here. For Proclus the three levels must represent a theoretical analysis: otherwise the ghost of Atticus would rise again from the grave into which Proclus had so elaborately directed him in the *Timaeus*-commentary. For we saw that the notion of *concreatio* requires that matter and form are a unity for as long as they exist (i.e. eternally, if we ask Proclus). Neither incorporeal prime matter nor unqualified body can therefore be allowed to exist on their own, in the same way that matter, disorder, and order were not allowed to be more than the products of a theoretical exercise necessary for the interpretation of the *Timaeus*. Even when three-dimensionality as such is not introduced as

[87] For the possibility of a convergence with mathematical body, see below p. 82ff.

a separate level, philosophers who reject the literal interpretation of the *Timaeus* are committed to theoretical distinctions where matter is concerned.

Although the interpretation of the *Timaeus* provides a major incentive for this kind of doctrine, no doubt some of its roots are to be found in Aristotle. His distinction between matter and form in *Physics* I.6-9 was followed by arduous attempts to find an explanation for the necessary unity of matter and form in *Metaphysics* VII-IX. Aristotle's stipulation that matter and form are two sides of the same coin, related as means to end, serves as both source and legitimization for the concept of *concreatio*.

For pagan as well as Christian philosophers *concreatio* also follows from the Demiurge's or God's transcendence above the levels of human artisans and Nature. Whereas Aristotle illustrated his principles with examples from the crafts, later thinkers tend to emphasize the differences, as we saw with the house analogy above.[88] For them reverence for the highest principle demands that all distinctions operative at lower levels are unified and to that extent nullified. For human artisans and nature matter precedes the realization of form in time; God creates matter and form at once.[89] From this point of view matter as a principle next to God is sheer blasphemy.

The need for theoretical distinctions where matter is concerned has probably induced the application of the equally theoretical concepts of genus, species, and differentia to the understanding of matter in the way we encountered above. Aristotle used his notion of matter to explain the nature of a genus.[90] The *tertium comparationis* is that the genus may be called the *substrate* for the differentiae; moreover, the genus possesses *potentiality* inasmuch as it is open to (further) determination.

The metaphorical interpretation of the *Timaeus* did not prevent a strong current in the Platonic tradition from insisting that prime matter really is a part of the world. For instance, the symmetry of Proclus'

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[88] See p. 9ff.

[89] Cf. *Contra Proclum* IX.9 340.2-341.23 where Philoponus employs this argument to defend *creatio ex nihilo* as the only acceptable form of creation in the case of God, against Proclus.

[90] *Metaph.* V.6 1016 a 25-28, V.28 1024 b 6-9, VII.12 1038 a 5-9, VIII.6 1045 a 33-35, X.8 1058 a 23-26; *GC* I.7 324 b 6-9. Cf. Happ (1971) 639-649, Rorty (1973), and less convincing Grene (1974) with the response by Rorty (1974), who in turn is criticized by White (1975); cf. also Lennox (1987) 347-351, esp. n. 24.

system simply requires that the One has its complement in matter. However, the position of matter in Aristotle is importantly different: matter and form are introduced as metaphysical principles necessary for the explanation of (primarily) physical substances. These substances can be said to contain matter. However, the relative nature of matter which Philoponus also stresses in his description of the third level, seems to forbid the conception of matter as one particular type of (quasi-)entity, one kind of stuff. In Aristotle matter is a metaphysical term which does not refer to a particular physical substance, but to an entity inasmuch as it serves as the material principle of a particular change.[91] Whatever fulfils this function is to be determined all over again in every instance. This gives Philoponus the freedom he needs to argue against the *communis opinio* on matter: if elemental change can be understood without the theoretical level of prime matter, prime matter is superfluous and should be expunged from theory and from our picture of nature.

The theoretical constructions of theories of matter appear to be quite vulnerable: a new theory, a new explanation of the same physical phenomena can easily replace the old theory. I suggest that Philoponus' insistence on theory prepares the ground for the replacement of the traditional view of prime matter. In his *Physics* commentary,[92] arguing that spatial extension could exist separately so far as its own nature is concerned (even if for other reasons it never does), Philoponus stresses that one should not object to that view that the category of substance is prior to quantity. Nature, and not categorial theory should determine what is the case; if necessary, theory is to be adjusted.[93] The same approach is found in the *Contra Proclum*: in physical discussions one should adjust theory to nature, and one should not construct theories which do not correspond to the things.[94] If the traditional notion of prime matter is only a theoretical construct, it can be brushed aside. Most interesting is, perhaps, that by doing so Philoponus arrives at a more Aristotelian interpretation of matter than any

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[91] A straightforward formulation of this insight is to be found in Balme (1990) 49.

[92] Philop. *in Phys.* 578.5-579.18 (*Corollarium de loco*).

[93] On the question whether and to what extent Philoponus did adjust category theory, see below Ch. 4, p. 172ff.

[94] See *Contra Proclum* XI.8 435.3-7: δεῖ γὰρ οἶμαι τὸν περὶ τῶν φυσικῶν πραγμάτων διαλεγόμενον οὐκ αὐτὸν συντιθέναι λόγους ἀσυμφώνους τοῖς πράγμασιν ἀλλὰ τοῖς φαινομένοις συμφώνους τε καὶ προσήκοντας ἐφαρμόζειν τοὺς περὶ αὐτῶν λόγους.

of his contemporaries. It should be noted however that he does not question the existence of a primary level of matter, but merely identifies another theoretical level of nature as the bottom line. The freedom to do so is gained by means of an Aristotelian approach to what had for so long been a Platonic enterprise.

3 *The arguments in favour of the* communis opinio *(XI.2)*

Let us see what arguments Philoponus grants his contemporaries in support of their view of prime matter. At the start of XI.2 the characteristics of the first level of matter described above are reduced to its being (1) one in number, (2) the common substrate and matter of all physical forms, (3) in itself immutable, and (4) incorporeal, even entirely formless.[95] According to Philoponus the supporters of this theory of matter establish their view by the following chain of arguments.

The change observed in all physical bodies, including the elements, would not be possible without one and the same immutable substrate. For instance,[96] brazen statues can only be recast into statues of the same material. For they have to have one and the same substrate and matter which remains unchanged according to the characteristic account of its nature[97] during the process. Moreover, bronze in itself is unshaped in the sense that it does not have, as a constitutive part of its own nature,[98] any of the shapes it may receive. In the same way it is necessary that the matter underlying all natural bodies is different from all natural forms it may receive. For this reason it is entirely formless. Moreover, matter must be immutable for otherwise everything would change into non-being instead of into something else (*Contra Proclum* XI.2 410.9-412.11).

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[95] It may be useful to provide the Greek terminology here: (1) ἕν τι, (2) κοῖνον πᾶσιν τοῖς φυσικοῖς εἴδεσιν ὑποκείμενον τε καὶ ὕλη, (3) ἀμετάβλητον αὐτὸ ὄν, (4) ἀσώματον, ἀνείδεον. In the conclusion in 412.11-14 'incorporeal' is replaced with 'formless' as a result of the example in which the receptacle is contrasted with forms rather than bodies. Needless to say, formlessness implies incorporeality. Compare Plotinus and Simplicius as discussed in Ch. 2, p. 100ff.; on the significance of formlessness see further Ch. 5 p. 255ff.

[96] The following exposition closely resembles Aristotle's introduction of matter in *Phys.* I.7, with the same analogies of bronze and wooden artefacts. The addition of a bronze horse, dog or cow underlines the purpose of the example (ὑπόδειγμα): its application to natural substances.

[97] *Contra Proclum* XI.2 411.16-17 ἀμεταβλήτου μένοντος κατὰ τὸν ἴδιον τῆς φύσεως λόγον.

[98] *Contra Proclum* XI.2 411.25 συμπληρωτικὸν τῆς ἰδίας φύσεως.

The notion of matter that arises from this description can be characterized as follows: matter is something that is related not so much to the elements alone but to natural forms as their substrate. Indeed, it is common to *all* natural forms and hence unique. Again, just like the substrate of any change, it remains unchanged in itself, or 'according to the characteristic account of its nature' (κατὰ τὸν ἴδιον τῆς φύσεως λόγον). This phrase, which occurs in the example of the bronze statue, suggests that matter too has the analogue of a nature; at least matter is said to be 'different' (412.1 ἑτέραν) from the natural forms it is able to receive. Because it is able to receive *all* natural forms it is entirely 'formless' in the sense that none of the natural forms is a constitutive part of its own nature. Hence it escapes being involved in the natural changes for which it is the substrate.

Despite the Aristotelian terminology this type of matter looks very much like Plato's receptacle. It is able to receive *all* forms[99] and therefore it is unique; it is not affected in any way by the forms that appear in it.[100] The example of bronze that is recast into different forms recalls the gold of Plato's famous example in the *Timaeus*,[101] which preserves its own nature while continuously being remoulded, and which is characterized by the stability that allows it to be called 'this'. The bronze is devoid *only* of the shapes it is able to receive, like the perfume base and the wax in the *Timaeus*. Prime matter, to the contrary, is formless without qualification, like the receptacle.[102]

Furthermore, since the matter that underlies all bodies is formless, and survives the changes of all bodies into each other, it is clear that its nature is different from all natural forms it can receive and none of those forms is constitutive of its own nature. Therefore we may infer that the forms are *accidental* to matter as such. This contradicts the Aristotelian notion of *essential* interdependence of matter and form we have encountered so far. Moreover, though the notion of substrate is omnipresent, the notion of contraries which is part and parcel of Aristotle's theory of substrate is entirely lacking.[103] Hence this substrate rather resembles its Platonized name-sake as conceived by Plotinus.[104]

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[99] Cf. Plato *Tim.* 50 b 9, e 5; 51 a 1, 7 (πανδεχές).
[100] Cf. *Tim.* 50 e 1-51 a 3.
[101] Cf. *Tim.* 50 a 5-b 5.
[102] Cf. *Tim.* 50 e 4-51 a 3, a 7 (ἄμορφον).
[103] The role of the substrate will be discussed below in Ch. 3 p. 155ff.
[104] Plot. *Enn.* III.6 [26] 8-9 with Simons (1985) 56-58. See also Ch. 2 p. 104ff.

This mix of predominantly Timaean vocabulary flavoured with Aristotle's terminology of matter and substrate is also found in e.g. Alcinous and Calcidius.[105] *Enneads* II.4 [12] 6, where Plotinus is introducing Aristotle's philosophy of matter, constitutes an almost *verbatim* parallel.[106] No doubt Philoponus' chapter on the *communis opinio* reflects the traditional doxography of the notion of matter.

4 *The traditional theory of matter in Philoponus' works: some controversial passages*

In a series of passages in several of his philosophical works Philoponus mentions and/or supports the traditional theory of matter, and accepts the existence of both an eternal prime matter and unqualified body.[107] More often than not unqualified body is regarded as the proximate substrate of the elements.[108] In all of these passages there is no sign that Philoponus is already thinking of the abolition of formless prime matter in favour of the level of three-dimensional extension. Hence we can only conclude that during a considerable part of his career Philoponus himself employed the traditional notion of prime matter he summarizes in *Contra Proclum* XI.1-2. To this extent the rejection of the traditional theory of prime matter in *Contra Proclum* XI.3 will be a correction of his own previous work.

However, some passages in the *in Physica* are not very clear as to Philoponus' acceptance or rejection of the traditional view. Verrycken has argued that four passages in Philoponus' *Corollarium de loco* and

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[105] See e.g. Alcin. *Didask.* VIII 162.29-163.10 with Whittaker (1990) note 136 *ad loc.*, Dillon (1993) 90-92; Calc. *in Tim.* § 268, 340.13-14 and esp. § 316-317a with Van Winden (1959) 161-162.

[106] The influence of Plotinus' discussion of matter will be outlined in Ch. 2 p. 100ff., and Ch. 5 p. 268ff.

[107] Philop. *in Nicom.* I γ 17-18, I ζ 3-4; *in Cat.* 65.8-66.25, 83.13-20, 190.8-191.4; *in Anal.Pr.* 66.6-26; *in GC* 9.20-10.13, 31.19-20, 36.36-37, 50.18-21, 66.6-9, 73.18-74.3, 75.6-24, 79.6-9, 82.19-21, 84.19-85.5, 87.18-20, 94.10-95.12 (three-dimensional extension is permanent), 119.17-120.11 (body as such is immutable), 145.26-147.27 (three-dimensional extension is the substrate of the elements), 151.5, 208.5-12, 211.24-27, 243.3-26, 246.8-13; *in Phys.* 4.26-30, 38.11-39.28, 59.31-60.1, 92.20-93.12, 156.4-158.8 (unqualified body is the substrate of the elements), 162.3-163.12, 189.21-192.2, 224.3-226.11 (unqualified body as substrate; for the question whether this text reflects the thought of Theophrastus rather than Philoponus, see my forthcoming [1]), 232.5-6, 244.6-9, 252.23, 401.1-17, 515.14-32, 516.22-26, 520.18-25 ('some people call unqualified body prime matter'), 621.19-24; *in DA* 14.5-19, 52.26-53.8, 344.13-29.

[108] An exception is Philop. *in DA* 212.18-25.

Corollarium de inani, which were marshalled by Wolff and Wieland as testimonies for the traditional view in Philoponus, are compatible with the views of the later Philoponus.[109] Verrycken's interpretation of these passages is in line with his hypothesis that the two Corollaries are to be ascribed to the later Philoponus, just like the *Contra Proclum*, largely because they are critical of Aristotle. It should be noted, however, that Verrycken seems willing to accept the possibility that the Corollaries were written at a time when Philoponus had not yet developed his later view of matter, although he holds on to his thesis that they were written after the first redaction of the *in Physica*. Since these texts are relevant for Philoponus' view of matter, I want to consider them anew.

In the *Corollarium de loco* Philoponus defends the thesis that place as such is a self-subsistent three-dimensional extension different from the physical body that occupies it. Aristotle's first objection against such a view had been that the combination of two extensions (body and place) would yield the division of an actual infinity of points: each part of the body would collide with each part of place. Part of Philoponus' response is to argue that division does not follow from mere three-dimensional extension, but from matter. For, division being a kind of action and being affected, a substrate common to both body and place is required before any division could occur. However, since spatial extension (τοπικὸν διάστημα) is incorporeal and without matter, while body (σῶμα) is corporeal and involves matter,[110] they have no substrate in common. Hence no division can occur, and the combination of place and body is entirely acceptable. The passage runs as follows:

T3 So it is not extension as such, of whatever kind it may be, that is the cause of division, but [extension] with matter, and this is body.[111] For

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[109] Verrycken (1985) II 417-419, n. 118, as against Wolff (1971) 120 nn. 123-124, 136 n. 44 and Wieland (1967) 131. The texts concerned are *in Phys.* 559.9-18, 579.3-6, 687.30-35, and 688.4-27. Cf. Sorabji *Analyses* 6 n. 112, *Philoponus* 19 n. 113, citing 578.32-579.18 in support of the traditional view. For Verrycken's two systems hypothesis see the Introduction, p. xiii-xiv.

[110] Throughout Philoponus' commentaries it is a commonplace that physical body is a compound of matter and form, see e.g. *in Phys.* 688.7-9, 26-28, *in DA* 212.18-25, 341.26.

[111] Philop. *in Phys.* 559.9-10: Οὐκοῦν οὐ τὸ διάστημα ἁπλῶς ὁποῖον ἂν ᾖ διαιρέσεώς ἐστιν αἴτιον, ἀλλὰ τὸ μετὰ ὕλης, τοῦτο δέ ἐστι τὸ σῶμα. In my translation I understand τὸ [*sc.* διάστημα] μετὰ ὕλης which suggests that 'body'

> matter is the cause of action and being acted on for the forms, viz. those which are of such a nature as to act and be acted on at all. For not even the opposites will be acted on by each other if not both the cause of acting and the cause of being acted on are in matter—I mean, of course, physical and corporeal affections. So if three-dimensional spatial extension is incorporeal and matterless, it will not produce any effect in the body that occupies it, nor will any effect be produced in it by the body, since only things which have the same matter act and are acted on in return. So even if the void passes through the body, there is no necessity that it divides it or is divided by it. (Philop. *in Phys.* 559.9-18, transl. after Furley [1991], slightly modified)

Verrycken stresses that the issue here is the difference between pure three-dimensional extension and corporeality, not the corporeality of matter, and so he believes that the argument can easily be reconciled with Philoponus 2. However, I would say that the lack of a substrate common to place and body is the issue here. 'Body', which refers to the composite of extension and matter, has a substrate, viz. matter. A little earlier Philoponus explained that spatial extension exists in itself and does not have its being in a substrate.[112] For this reason it is impossible for body and space to have a substrate in common and, consequently, to affect each other. In spite of an interpretative difficulty (see n. 111) there is no need to assume that the level of traditional prime matter is absent from this text. Hence it is in agreement with Philoponus 1 in this respect.

Another controversial text, again taken from the *Corollarium de loco*, is not decisive either. Arguing that none of the categories subsist without implicating each other, not even substance,[113] Philoponus says:

T4 Matter and the second substrate—I mean the three-dimensional and unqualified body which is able to subsist by itself (καθ' αὑτό) inasmuch as depends on it (ἐφ' ἑαυτῷ)—nevertheless never exist (ὑφέστηκεν) without qualities. (Philop. *in Phys.* 579.3-6)[114]

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refers to unqualified body only. Alternatively, τὸ μετὰ ὕλης may refer to physical body. On either interpretation the level of traditional prime matter remains in place.

[112] Philop. *in Phys.* 558.29-30: τὸ δὲ διάστημα τὸ τοπικὸν ἀσώματόν ἐστι καὶ χωριστὸν σώματος καὶ καθ' αὑτὸ ὑφεστηκός, οὐκ ἐν ὑποκειμένῳ τινὶ τὸ εἶναι ἔχον.

[113] For the arguments, see below Ch. 4 p. 174ff.

[114] Philop. *in Phys.* 579.3-6: Καὶ ἡ ὕλη γοῦν καὶ τὸ δεύτερον ὑποκείμενον, λέγω δὴ τὸ τριχῇ διαστατὸν καὶ ἄποιον σῶμα, ὅσον ἐφ' ἑαυτῷ δυνάμενον καθ' αὑτὸ ὑποστῆναι, ὅμως οὐχ ὑφέστηκεν οὐδέποτε ἄνευ ποιοτήτων (= part of T29).—In *in Phys.* 146.3-4, 9; 172.2-3 Philoponus also mentions prime matter and

Verrycken argues that although the term 'second substrate' for unqualified body is indicative of Philoponus 1, the singular of 'in itself' and 'inasmuch as depends on it' suggests that 'matter and the second substrate' is one and the same thing—which would agree with Philoponus 2. This interpretation is problematic inasmuch as the view of Philoponus 2 is characterized by the rejection of the traditional first substrate in favour of the traditional second substrate, which is explicitly re-baptized as the first substrate on those occasions.[115] As is clear from my punctuation (which also differs from Furley [1991] 41) I take it the Greek may yield that both (prime) matter and the second substrate (together neuter plural) never subsist (verb singular) without qualities, whereas the clause 'I mean .... inasmuch as depends on it' serves as a further explanation of the phrase 'second substrate' (neuter singular).

Two passages from the *Corollarium de inani* provide similar problems. In *in Phys.* 687.29-688.2, arguing against Aristotle's rejection of void, Philoponus addresses the argument that if one removed all attributes from body, its volume (ὄγκος)[116] would remain, and it would no longer be distinguishable from a void of equal size.[117] Philoponus objects:

T5 Furthermore, he wrongly reduces void and body to the same thing. For if one removes every quality from body, even then corporeal extension will still not be the same as the void. If one removes every quality from body, what will be left behind is envolumed matter (ἡ ὀγκωθεῖσα ὕλη) i.e. the unqualified body, which consists of matter and quantitative form, whereas the void does not consist of matter and form, because it is not body, but incorporeal and matterless, and only room for body. So if the remainder of body with all qualities removed is nevertheless body, and the void is not body, it will never follow that

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three-dimensional extension together in their role of substrate, which is again clearly emphasized in *in Phys.* 190.20-25 (T55).

[115] See e.g. *Contra Proclum* XI.3 414.17-20, XI.6 425.6-12, XI.8 433.3-5; cf. XI.7 426.21-24.

[116] I shall translate ὄγκος as 'volume' in agreement with Sorabji *passim*. However, 'volume' should not be taken as referring merely to cubic size, because the Greek term ὄγκος is less specific than that. Perhaps 'bulk' may be considered as an alternative, especially when definite size is not stressed. 'Mass' is less appropriate in view of its modern connotation in physics and its association with material rather than dimensional properties.

[117] Arist. *Phys.* IV.8 216 b 2-10.

body is in body, if body is in the void as in a place.[118] (Philop. *in Phys.* 687.29-688.2; transl. Furley [1991], modified)

Here there can be no doubt that unqualified body is regarded as a composite, and hence matter cannot but refer to prime matter. Though Verrycken (*l.c.*) rightly argues that the issue is the difference between corporeal extension and the void, he goes on to point out that Philoponus only mentions matter because he is forced to find a foundation for that difference, without actually accepting the existence of prime matter. He even suggests that the opposition of corporeal extension and void extension implies a duality within body in the terms itself. This, I believe, is quite implausible: the opposition of two types of extension does not imply a duality within body. Unqualified body is part of a physical substance; void extension is different from that substance as well as from its three-dimensionality, and can be regarded as an independent extension *outside* physical body. Motion through the void and change of place suffice to distinguish body from void and place respectively, and Philoponus need not have recourse to the composite nature of unqualified body—unless he supports it and believes it to be appropriate here.

The sequel of T5 contains the last text about which questions have been raised:

T6 1. But 'Yes,' he insists; 'for if the extension is in place *qua* extension (καθὸ διάστημά ἐστιν), let its matter, too, be taken away from it. Being bodiless according to its own definition (τῷ οἰκείῳ λόγῳ), it is not in place at all. So in that respect the extension belonging to the body will be no different from the void.' But one who argues thus must realize that he is asking for the impossible. For that body, which we say is in place and is unable to pass through another body, is nothing other than the compound of matter and form. So if the matter is taken away, the form of body vanishes at the same time, because it has its being in matter.

(...)

2. So too, then, if you think of bodily extension outside matter, it will no longer be in place, since it is no longer a natural thing, and such an extension would not be said to be unable to pass through body. Indeed, it will not even be extended, except in its conceptual formula (τῷ λόγῳ)—or rather, there will not even be such a body in reality at all,

[118] On the convergence of place and void in Philoponus, see e.g. Wieland (1967) 121, Sedley (1987) 141, 151-153. Cf. Philop. *in Phys.* 563.20-21, 567.30-33, 573.9-11.

> unless one is speaking of the Model[119] or the defining formula. But our present discussion does not concern them: our inquiry is about the things of nature. (Philop. *in Phys.* 688.2-9, 20-25; transl. after Furley [1991], modified).

Verrycken believes that this explanation concerns physical body, not unqualified body, and this is cannot be excluded as far as §1 is concerned. For Philoponus does not make it clear which form he is thinking of. However, the preceding passage (T5) suggests that body must be unqualified body here too, if Aristotle's objection (T6 §1) continues the stripping operation started there. The thought experiment of removing unqualified body's matter—which must be prime matter—is rejected because the form of extension (so much is clear from §2) cannot exist without its substrate. What is left, then, is only a figment of thought which is irrelevant to physics. Verrycken seems to think that Philoponus is here rejecting the hypothetical notion of unqualified body in favour of physical body. I would say that in T6 Philoponus argues that the form of unqualified body cannot exist without its *substrate*, prime matter, except in thought where it is outside the realm of physics. This is not in agreement with Philoponus 2 who denies that unqualified body needs a *substrate* (it is *prime* matter), and claims that unqualified body only needs a *form* in order to exist (see further Chapter 5).

We may conclude that none of these controversial passages reveal Philoponus' acceptance of the new definition of matter while he was writing the Corollaries. Therefore, I am inclined to reject Verrycken's suggestion that Philoponus had already developed his later theory of matter when he was writing the Corollaries.[120] As far as the issue of prime matter is concerned the Corollaries do not stand out from the surrounding commentary.

III TURNING THE TABLES (*CONTRA PROCLUM* XI.3)

Contra Proclum XI.3 is crucial to the understanding of Philoponus' later doctrine of matter. Here he describes how one can arrive at a new understanding of prime matter, setting out from the traditional point of

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[119] Furley translates 'conceptual model', but no doubt τὸ παράδειγμα refers to the transcendent form of body.

[120] Verrycken already considered this as a possibility, see above p. 32.

view. A careful analysis of this chapter and a comparison with XI.1-2 will serve to pinpoint the extent of Philoponus' innovation.

Entirely in the spirit of the polemics he is engaging in, Philoponus shows that from the arguments listed in XI.2 one could also arrive at the opposite conclusion that prime matter is *not* incorporeal and formless. He writes:

T7 In the change of bodies into each other the three-dimensional is seen to remain unchanged. E.g. water, when changing into air, does not change *qua* body (ᾗ σῶμά ἐστιν). For the three-dimensional, the substrate of the water, remains unchanged as such (ᾗ τοιοῦτόν ἐστιν) even when the water changes into air. Neither do we see the three-dimensional coming to be from the non-three-dimensional, nor the non-three-dimensional from the three-dimensional. For never did a body change and become incorporeal nor, conversely, did anything formerly incorporeal become body. So the three-dimensional, or body generally (ὅλως τὸ σῶμα), is unchangeable *qua* body. (Philop. *Contra Proclum* XI.3 412.17-28)

Philoponus adds that in case someone could prove that such a change from 'the three-dimensional' (or body as such) to the non-three-dimensional or vice versa really occurs, he would agree that there existed a substrate for the three-dimensional which would remain unchanged during that change. He notes that this substrate will indeed be incorporeal since a substrate is always different from whatever it underlies, as bronze is different from a particular shape (412.28-413.10).

However, if he is right, and body as such remains unchanged during the change of the elements into each other, there is no argument left to prove that any incorporeal matter underlies the three-dimensional. After all, from the *change* of qualified bodies it was proven that there had to be something different underlying (413.10-24). He concludes, with a rhetorical question:

T8 So when the three-dimensional, i.e. the unqualified body (τοῦ ἀποίου σώματος), does not change *qua* body, but when every change of bodies occurs in virtue of their being qualified or in virtue of largeness and smallness, then what necessity still remains on account of which one may conclude that there is also something different and incorporeal which underlies the three-dimensional—instead of it being itself the first substrate of all things (τὸ πρῶτον πάντων ὑποκείμενον) and matter as such (τὴν ἁπλῶς ὕλην), as also the Stoics rightly believed? (Philop. *Contra Proclum* XI.3 413.24-414.5)

In two respects *Contra Proclum* XI.3 shows a different point of view from what we have encountered so far. First, in T7 there is no reference to a *unique* and *common* substrate. The question of the identity of prime matter is settled by using the approach that matter can only be understood in conjunction with its correlative form. Whenever a substrate is mentioned, it is the substrate *of* water, air, or (hypothetically) of the three-dimensional and body as such. We saw how the argument at XI.2 seemed to ignore this Peripatetic interdependence.[121] The decisive role of the elements agrees with the Peripatetic interpretation of *GC* II.1 329 a 24-36.[122] In this respect T7 contradicts argument 1 and 2 of XI.2.[123] When, in T8, the three-dimensional is presented as the alternative to the traditional prime matter, Philoponus speaks of *one* different thing again, which is the first substrate of *all* things.[124] Insofar as everything consists of the four elements, this is of course true in both Philoponus' and the traditional account.[125] Still, we may conclude that according to Philoponus matter's reception of *all* forms is not constitutive of the nature of matter as such.[126]

Secondly, we can see that the third and fourth argument of the traditional account[127] are played off against each other. Philoponus maintains that the unchangeability condition of the fourth argument is vital: if there is a change, there must indeed be something unchangeable underlying it. But, by *tollendo tollens*, if the three-dimensional does *not* change, no further substrate is needed. Alexander *DA* 6.12-20 provides a noteworthy parallel in that he also regards a discussion concerning the generation of body *as such* (ἁπλῶς σῶμα) as a purely theoretical exercise if the cosmos is eternal. For all generation of body is the generation of *this* body (τόδε τὸ σῶμα), which is the body of

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[121] Cf. p. 30.

[122] For the traditional interpretation of this text see e.g. Joachim (1922) comm. *ad loc.* p. 198-199, Williams (1982) Appendix p. 214 under (6). On Philoponus' interpretation, see below p. 143ff.

[123] Cf. p. 29. Contrast Philop. *in GC* 94.13-95.10 where three-dimensional extension is said to remain during every change, and that it is not just the particular substrate of the generation and corruption of the elements.

[124] Cf. *Contra Proclum* XI.3 413.21-24: ἐκ γὰρ τῆς τῶν πεποιωμένων σωμάτων μεταβολῆς τὸ δεῖν αὐτοῖς ὑποκεῖσθαί τι ἀμετάβλητον ἕτερον ὂν παρ' αὐτὰ ἀπεδείκνυτο.

[125] *Contra Proclum* XI.3 412.19-22, 413.17-20, 414.17-20. However, elsewhere in the *Contra Proclum* the three-dimensional is regarded as the substrate of flesh, IX.11 346.2-11, XI.14 462.18-463.10, or the bodily humours, IX.16 376.12-20.

[126] Contrast Plotinus below p. 119ff.

[127] See p. 29.

something particular, out of what is not *this* body. In Philoponus the three-dimensional is apparently equivalent to unqualified body and body as such. This means for him that the first substrate is not formless—contrary to argument 3—even though it is still different from all natural forms it receives.[128]

A striking feature of Philoponus' account is his reference to the Stoics. The fact that one of Philoponus' names for his prime matter is the Stoic phrase 'unqualified body' (ἄποιον σῶμα)[129] only seems to add to the significance of this reference. Sorabji[130] has discussed the question whether the Stoics provide an example of the view that body is extension, or extension endowed with properties. He points out that though Philoponus may have turned from an anti-Stoic position (accepting incorporeal prime matter) to a position 'at least verbally in accord with part of one Stoic view of body',[131] Philoponus did so for utterly un-Stoic reasons: (1) if matter were incorporeal, bodies would consist entirely of the incorporeal, since forms are also incorporeal[132]—but for the Stoics even qualities and the soul are corporeal; (2) 'the three-dimensional', which is now regarded as matter, constitutes the definition of body and cannot but be body—but this only warrants calling the three-dimensional 'body', whereas it is matter for different reasons. More decisively, the Stoics used a different definition of body, either including resistance (ἀντιτυπία) or referring to the capability for action and passion.[133] But Philoponus believes that what is incorpo-

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[128] On the notion of formlessness see further Ch. 5.

[129] For the Stoic provenance of the term ἄποιος, cf. e.g. Dillon (1993) 91, who refers to DL VII 134 (= SVF I 85) where it is attested for Zeno. For ἄποιον σῶμα see Plut. *Is.Osir.* 369 a 7-8 (= SVF II 1108), *Comm.not.* 1086 a 1; Plot. *Enn.* II.4 [12] 1.13-14 (= SVF II 320).

[130] Sorabji *MSM* 36-38.

[131] *O.c.* 36.

[132] This argument is taken from a different context, *Contra Proclum* XI.8 443.6-13 (see Ch. 5 p. 274ff.).

[133] Cf. Plot. *Enn.* VI.1 [42] 26.17-22; Ps-Galen. *Qual.incorp.* 10 p. 483 K. (= SVF II 381); add SVF II 315, 319, 501, p. 162, 31. Mansfeld (1978) 158-167 provides a thorough examination of the definitions of body ascribed to the Stoics and their possible origin. Interestingly, he points to the ambiguity of στερεοειδῆ in *Tim.* 31 b 4 (associated with tangibility) and 32 b 1-2 (mathematical three-dimensionality, add 53 c 3-6) and argues that the two Stoic definitions of body (in terms of ποιεῖν–πάσχειν and in terms of three-dimensionality–resistance) are meant to be a critical alternative to Plato. Perhaps the first definition, the only one explicitly ascribed to Zeno, was strengthened by later Stoics by means of the second (*o.c.* 163). According to Mansfeld there is a definite link between action–passion and (degrees of) resistance as physical concepts (*o.c.* 164).

real (e.g. light, heat etc.) can also act, and it is not clear that he thinks that matter can be acted on since it does not undergo change in the process of receiving qualities.[134] Sorabji concludes that the Stoics do not provide an example of a view according to which body is extension or extension with properties.[135]

It seems that the conclusion as it is formulated is correct; yet, it is unsatisfactory to have to set aside the Stoic precedent which Philoponus himself thinks appropriate—did he merely use the verbal agreement with the Stoics to conjure up an authority for his own views, as part of a polemical strategy? But that seems unlikely since his Neoplatonist contemporaries would hardly be impressed by a reference to the Stoics whose materialism they reject, as e.g. Plotinus' criticism and Simplicius' quotations of Plotinus show.[136] However, Philoponus does not refer to the Stoics as a precedent for the view that body is extension or extension with properties, which is Sorabji's angle, but as a precedent for the view that the first substrate and matter for everything is three-dimensional.[137] And this seems to be entirely correct, even beyond the verbal agreement. The relation between three-dimensional extension and the first substrate is crucial to Philoponus' argument and we have several sources that testify that the Stoics called the first substrate body. They defined body as being at least *also* three-dimensional,[138] so to all intents and purposes it could rightly be called 'the three-dimensional'. Philoponus does not say that the Stoics entertained exactly the same view of prime matter as he did, but merely that they considered the first substrate to be three-dimensional and corporeal. For him, that is the crucial move and he does not hesitate to point out that the Stoics supported it: as soon as the three-dimensional (=

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[134] More precisely, Philoponus maintains that his prime matter does not undergo any change *as far as its own nature, i.e. its three-dimensionality is concerned.* Matter is certainly affected by the changes like a proper Aristotelian substrate, and unlike Plato's receptacle.

[135] Sorabji *MSM* 37-38.

[136] Cf. Simpl. *in Phys.* 229.11-230.14. For a survey of Plotinus' arguments and Simplicius' reception of them, see Ch. 2 p. 100ff.

[137] See Philop. *Contra Proclum* XI.1 410.1-3 τῶν δὲ ἀπὸ τῆς Στοᾶς οἱ πλεῖστοι πρὸς τῇ ὕλῃ τὸ τριχῇ διαστατὸν εἶναι ὑπέθεντο; XI.3 414.1-5 ... δι' ἧς ἄν τις συλλογίσαιτο τὸ καὶ τῷ τριχῇ διαστατῷ ἕτερόν τι ὑποκεῖσθαι ἀσώματον καὶ μὴ αὐτὸ εἶναι τὸ πρῶτον πάντων ὑποκείμενον καὶ τὴν ἁπλῶς ὕλην, ὡς καὶ τοῖς Στωικοῖς καλῶς ἔδοξεν;

[138] Cf. SVF II 357-358, SVF III p. 259 n. 6 (Apollodorus), whereas SVF II 381, 501 add ἀντιτυπία to the definition of body.

body) is regarded as the first substrate, the conclusion that incorporeal prime matter has no role to play any more will immediately follow.

But the significance of Philoponus' reference to the Stoics may go further than that. In Chapter 2 we shall see that the objections that Philoponus raises against his new definition in *Contra Proclum* XI.4-7 correspond to arguments that Plotinus had raised against the Stoics.[139] Indeed, Philoponus' final position could truly be described as 'unqualified body is prime matter', and it is precisely with these words that Simplicius introduces the views of the Stoics and a more recent philosopher, Pericles of Lydia.[140] Simplicius proceeds to attack them by means of Plotinus' arguments against the Stoics as well as by some arguments of his own. Whatever Philoponus knew of the Stoics, he must have realized that some of the objections against their position could also be raised against his own, and he tried to outwit his opponents beforehand. For us this means that his reference to the Stoics provides a clue which helps explain the remainder of Philoponus' excursus on matter.

Let us return again to chapter XI.3. It will be seen that the conclusion that the first substrate is not incorporeal hinges on the meaning of 'the three-dimensional' and on the validity of the identification of 'the three-dimensional' with unqualified body and body as such. To avoid misunderstanding, Philoponus adds the following definition of 'body as such':

T9 1. By 'matter as such' and 'body as such' I do not mean the universal, in a way generated, and studied only in our thought and by reason (τῷ λόγῳ).[141] No, I mean what is in existence and has already become a part[142] or even element[143] of the composite, though according to its

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[139] See further Ch. 2, p. 109ff.

[140] See Simpl. *in Phys.* 227.23-26. For Pericles, cf. R. Beutler, *RE* Suppl. VII, p. 899 s.v. Pericles (8). The only other reference to him is in Marinus' *Vita Procli*, § 29, who mentions him as a famous contemporary and colleague of Proclus. Hence the fact that Simplicius mentions him in connection with the Stoics need not imply that he was a Stoic.

[141] For the use of ἁπλῶς as an identifier of the name of a genus, cf. e.g. *Contra Proclum* XI.8 433.27-29.

[142] Cf. Arist. *Metaph.* 1023 b 19-25.

[143] An important parallel for the notion of element used here is Philop. *in Phys.* 7.25-8.17. There matter and form are both called συμπληρωτικὰ τῆς οὐσίας which are co-ordinated or allocated (συγκατατέτακται, see Lloyd [1990] 65), i.e. they are constituents of the physical substance; moreover, they are integral, i.e. not self-contained, parts. Cf. Simpl. *in Phys.* 3.18.

> own definition (τῷ οἰκείῳ λόγῳ) it is free from any of the qualities which it is able to receive one after the other.
> 2. So this I call 'body as such': that which is determined by the three dimensions, because in itself it is neither warm nor cold, heavy nor light; nor does it receive any such further determination according to the characteristic definition of its nature, so as to be called a heavy body or a warm body. Let 'body as such' be understood in this sense everywhere. (Philop. *Contra Proclum* XI.3 414.5-17)

At once it becomes clear why Philoponus always links his notion of prime matter to a particular entity like water or air: he is concerned with a *part* of the composite (§1).[144] This excludes the universal notions of 'matter' and 'body' which as such have existence in our minds only.[145] Philoponus' matter is the matter that is part of the concrete physical entity—and how could it be otherwise if matter is supposed to explain the changes of physical entities.[146]

This part of the composite can be isolated in thought to define it (§2). Taking it 'as such' means excluding every quality which it may receive *qua* matter. When this approach is applied to Philoponus' candidate for prime matter the only determination that remains is

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[144] In this way Philoponus can solve a difficulty raised by Verrycken (1985) III 778-781 and Sorabji *MSM* 26-27, cf. 17-19. They argued that the new definition of matter is difficult to reconcile with Philoponus' definition of void as a three-dimensional volume (*in Phys.* 563.20-21). To distinguish the two extensions Verrycken believes Philoponus would have to add that matter is *corporeal* extension, as opposed to the *incorporeal* extension of the void. We now see that Philoponus can make the distinction between matter and void by opposing three-dimensionality which is part of a composite to three-dimensionality which is not. Verrycken also suggests that Philoponus might have connected his modified notions of place and void with *creatio ex nihilo*, as if place were a Platonic receptacle *in* which the universe was created. Of course place or void could only acquire this position when the traditional prime matter was removed (o.c. III 780-781). However, this suggestion seems to founder on the difference of matter *ex quo* and space *in quo*, which, to my knowledge, Philoponus never confused.

[145] Note that Philoponus cleverly associates the definition of body with the definition of matter (§1) before focusing on the feature of three-dimensionality (§2), suggesting that body is matter by definition.—In view of modern interpretations of Philoponus' doctrine of matter (see below p. 169ff) we should add that the definition also excludes three-dimensional extension which exists outside bodies, viz. place and void, both of which Philoponus believes to be characterized by three-dimensionality.

[146] According to Philoponus the universal body only exists on the level of the δημιουργικοὶ λόγοι and not ἐν ὑποστάσει; the same obtains in the case of the corresponding notion of matter when taken universally (καθόλου ὕλη), see *in GC* 85.9-18. For the use of ὕπαρξις and ὑπόστασις in the commentators see Taormina (1994).

constituted by the three dimensions; therefore only this three-dimensionality enters into its definition.

Given that in Philoponus the expression 'body as such' is equivalent to 'unqualified body' and 'the three-dimensional', the expression 'the three-dimensional' is here being clarified in an important way. We learn that the expression refers to that part of a composite, e.g. an element, which is defined by being limited by the three dimensions alone. In short, it refers to the element's being three-dimensionally extended. This 'part'[147] remains unchanged during every change of the elements into each other: they are all 'bodies' in this restricted sense, for they are all three-dimensionally extended. Changing into each other does not make any difference so far as their being three-dimensionally extended is concerned. Given the sense of 'body' defined in T7 we might even say that according to Philoponus this feature alone enables us to call physical bodies 'bodies' regardless of the other characteristics they undoubtedly have.[148] One may recall the first chapter of the *De caelo*, where Aristotle submits that the subject matter of all physical inquiry is 'body', as opposed to surfaces, lines and points, which

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[147] Matter is a part inasmuch as a physical substance is a composite of matter and form and the constituents of a composite are called parts. One should distinguish this notion of part from material parts on the one hand, and from differentiae as parts of a substance on the other. For the latter see further Ch. 4 p. 220ff.; cf. Ch. 3 p. 147.

[148] Schrenk (1994) 160-161 has argued that Proclus' claim that space is 'corporeal' means that space is three-dimensional; cf. Simpl. *in Phys.* 611.34-612.1 (with Simplicius' assessment at 614.22-27), where it is explained that space must be the same kind of ποσόν as the body it contains, because it is supposed to be of equal size (ἴσος, cf. Arist. *Phys.* IV.1 209 a 28-29, IV.4 211 a 2); body has three dimensions, so place has three dimensions too and is corporeal in this sense. With regard to place Philoponus agrees, see his *Corollarium de loco,* esp. *in Phys.* 567.29-585.4. Apparently, in this Proclean context 'body' and 'corporeal' refer to three-dimensional extension only—which of course does not rule out that space has more characteristics than that, especially since Proclus regards it as a certain kind of light.—This interpretation would also shed light on *ET* prop. 80 where it is said that a body insofar as it is a body is subject only to dividing and being acted upon. J. Barnes (1983) 185 wonders what happened to the idea that bodies are, by definition, things capable of acting and being acted upon, but this applies to physical bodies, not to bodies *qua* three-dimensionality.—Incidentally, Schrenk *o.c.* 165 n. 48 is wrong to suggest that Sorabji *Philoponus* 35-36 and Sedley (1987) argue that Philoponus took space to be the sole substrate for subjects, since both Sorabji and Sedley are well aware that Philoponus differentiates between corporeal and spatial extension.

fall short of the complete set of three dimensions.[149] Simplicius confirms that this chapter is relevant in the context of matter.[150]

After his definition of body as such, Philoponus reiterates the conclusion that this body is the first substrate and prime matter of every physical thing. It is noteworthy that prime matter can be said to be the first substrate of *every* physical thing now, but only after, or rather *because* it has been established that prime matter is the unchangeable substrate of the change of the elements into each other.[151] Though it is possible to construe the traditional view recorded in XI.1-2 in the same way, it should be noted that Plotinus argued that every feature including magnitude was contributed by a form and was replaced whenever a change of form occurred. This makes prime matter the unique and common matter of all physical forms in a much stronger sense than Philoponus seems to allow here.[152]

Philoponus at once points out a corollary of his claim that body as such is the first substrate: it can no longer be considered a composite as it used to be (414.20-415.10). As if answering an objection to this effect, he explains that though qualified bodies are composites of substrate and form, this is not sufficient reason to assume that their substrate, unqualified body, is also a composite of substrate and form. For qualified bodies are not composite *qua* body, but *qua* body-such-and-such-qualified, e.g. warm, cold, heavy, light—all these qualities have unqualified body as their substrate. So every qualified body consists of a substrate (unqualified body) and form (of fire, air and the like); but unqualified body, as the substrate of *all* physical forms, is not composite but simple—in this it resembles form.

It is important to note that in ascribing simplicity to unqualified body, Philoponus maintains the perspective of the composite of which unqualified body is a part—in agreement with the definition given

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[149] Cf. *Cael.* I.1 268 a 8-10: μεγέθους δὲ ἐφ' ἓν γραμμή, τὸ δ' ἐπὶ δύο ἐπίπεδον, τὸ δ' ἐπὶ τρία σῶμα· καὶ παρὰ ταῦτα οὐκ ἔστιν ἄλλο μέγεθος διὰ τὸ τὰ τρία πάντα εἶναι καὶ τὸ τρὶς πάντῃ. Cf. *Metaph.* XIII.3 1078 a 25-26 which is a much more sophisticated way of focusing on three-dimensionality.

[150] See Simpl. *in Phys.* 230.20-21, discussed below, p. 126. Cf. Ps.-Alex. *in Metaph.* 725.11-26.

[151] *Contra Proclum* XI.3 414.7-20. Needless to say, all physical entities consist of the four elements.

[152] Cf. Plot. *Enn.* II.4 [12] 8.23-31, 9.13-15, III.6 [26] 16.15-20; Simpl. *in Phys.* 229.17-21. See further below p. 109ff. No doubt this kind of Platonist interpretation of Aristotle influenced medieval philosophers towards positing prime matter as the substrate of *every* substantial change.

above. From the same perspective he derives the simplicity of both substrate and form: the elements of a composite are simple by definition or they would not be elements. If unqualified body which acts as a substrate does not change itself, there is no reason to change the perspective and wonder about the substrate of that change. Hence, unqualified body can only be regarded as simple.

Philoponus can expect that his new definition of prime matter will raise a whole array of questions from his contemporaries. Apart from the invectives of Simplicius the sequel of Philoponus' own discussion will make that clear. He presents several objections and his answers will give us detailed information about his views. *Contra Proclum* XI.4 deals with an objection against body's immutability: do not growth and diminution constitute a change of the three-dimensional itself? Another pressing question is dealt with in XI.5: how can a quantity like three-dimensionality be the essence of body, which is a composite substance? Finally, in XI.7, it is asked how three-dimensionality can be a substrate, if it is the form of body. These problems which Philoponus raises for himself will be dealt with in the subsequent chapters.

CHAPTER TWO

THREE-DIMENSIONALITY IN THE ANCIENT PHILOSOPHICAL TRADITION

Though at first sight three-dimensionality seems a rather straightforward concept, a preliminary discussion of several of its aspects is called for. Confronted with an unwieldy number of passages on three-dimensionality in the ancient tradition, and in the ancient commentaries on Aristotle in particular, we stand in need of rigid criteria. In this chapter I shall introduce the notions of extensionality, extension, determination and limitation as the tools which are necessary to estimate the relevance of the sources for our topic, and to differentiate several strands in the tradition.

Since Plato and Aristotle provided most of the material with which the later philosophical tradition chose to work we shall begin by surveying some problematic aspects of their work. As we may expect, the most important texts concerning three-dimensionality in Aristotle refer to the interpretation of the *Timaeus* and other issues in Platonism and/or Pythagoreanism. This observation prompts a further look into the motivations for the rise of three-dimensionality other than the Aristotelian texts hitherto put forward in the secondary literature (i.e. *Metaph.* Z.3 and *Phys.* IV.2). This is not to say, of course, that Aristotelian remarks may not have influenced Neoplatonic thought independently; it is indeed very likely that there has been a continuing cross-fertilisation between Platonic and Aristotelian texts, to which the works of Plotinus and Proclus testify. Nevertheless, this consideration should not have precedence over other, perhaps more important, sources for later Neoplatonism: the continuing interpretation of Plato's works and, from Iamblichus onwards, the revival of (Neo)pythagoreanism.[1]

A separate section will be devoted to some aspects of the reception of the Stoa in Neoplatonism since the commentators designate the level of three-dimensionality by means of the Stoic term ἄποιον σῶμα, unqualified body. Moreover, it is well-known that the Stoics regarded

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[1] For the latter see esp. O'Meara (1989).

substance and matter as corporeal, and Philoponus rightly refers to them as anticipating his own view that the ultimate substrate is three-dimensional (*Contra Proclum* XI.3 414.4-5). Plotinus, on the other hand, turned his interpretation of Plato's receptacle as well as some of Aristotle's statements against the Stoic view. I shall argue that these arguments, which were still quoted with approval by Simplicius, provide Philoponus with the material for the objections he raises against his own new definition of prime matter. Moreover, Simplicius manages to defuse Plotinus' criticisms in order to defend his own view of matter as indefinite extensionality. What is more, he bases that view on a piece of Pythagorean doctrine he finds in Moderatus. An analysis of Simplicius' approach to prime matter provides the opportunity to comment on his attitude to the philosophical tradition, in which he differs from Philoponus.

I ASPECTS OF THREE-DIMENSIONALITY

Before examining several ancient discussions featuring the three dimensions in one role or another, it will be useful to differentiate between several aspects of three-dimensionality in a general way. We shall encounter each of these aspects in Plato's account of matter and generation in the *Timaeus*, and/or in Aristotle's discussions of place and matter which partly respond to Plato. The differentiation of these aspects is necessary if we are to discuss, without ambiguity, the Neoplatonic refinements of the notion of three-dimensionality in relation to matter. This section does not present an exhaustive analysis of the notion of three-dimensionality from a modern point of view, but lists only those aspects that play a role, implicitly or explicitly, in the development of the notion of three-dimensionality in ancient thought. Sometimes problems arise in interpreting ancient texts about three-dimensionality because of the variety of the Greek terms involved. Therefore this section also serves to establish a vocabulary that will prove useful in the sections to follow.

1. The most prominent aspect of three-dimensionality is *extensionality*. The three dimensions together exhaust the different ways in which a physical thing can be extended. Extensionality is most apparent in discussions of place: every perceptible body occupies place, or takes up space, which cannot be occupied by another perceptible body at the

same time (*pace* the Stoics). Extensionality in itself may be considered devoid of any conception of magnitude and limit.

2. In each particular case a physical entity has an *extension*, i.e. a particular length, width, and depth. Different three-dimensional extensions may be compared quantitatively in terms of *volume*, by means of which we express the 'amount' of three-dimensional extension. Volume or extension, in opposition to extensionality (1), is to be associated with *definiteness* in terms of size.

3. A third, more general, aspect of three-dimensionality is *determination*. This aspect is most apparent when three-dimensionality is viewed in its relation to that which possesses it. Both the notions of extensionality (1) and extension (2) imply this aspect (whereas only *extension*, in the vocabulary used here, implies a *further* determination as to size). In other words, the fact that something is characterized by three dimensions provides a certain amount of positive information.

As a kind of determination three-dimensionality may be contrasted with other kinds of determination, e.g. qualities and relations which also determine an entity, though in a different way. In some contexts this determination differentiates physical three-dimensional entities from intelligible ones, which are considered to lack any extension whatsoever (they are ἀδιάστατος). In other contexts three-dimensional extension defines a mathematical solid. In this way a three-dimensional entity can be distinguished from surfaces, lines, and points which have two, one, and no dimensions respectively. This is true regardless of the ontological status attributed to these entities and regardless of the relation between mathematical and physical bodies (σώματα). Besides, there seems to be a consensus among both ancient and modern philosophers that three-dimensionality is probably the only mathematical property to be found in an unqualified way in the physical world.

4. In some contexts we find that three-dimensionality is closely connected with *limitation*. In mathematics a solid may be defined as that which is bounded by surfaces, as a surface is bounded by lines, and lines by points (of course, a body is also bounded by lines and points inasmuch as its surfaces are). Conversely, mathematical construction generates lines from points, surfaces from lines, and solids from surfaces. From this point of view one may come to consider a body to be reducible to, and dependent on, its limits, with the result that the limits

may seem to have a higher ontological status than that which is limited by them.

It will be clear that this kind of *limitation* is itself a kind of determination (3) over and above extensionality (1); it constitutes a condition for definiteness as to size (noted under extension [2]), for an unlimited body cannot be of definite size.

A peculiarity of three-dimensionality can be seen from the following consideration. In mathematical construction the notions of limitation and determination run parallel for a number of stages: a point is itself *determined* by non-dimensionality, and *limits* a line; a line is *determined* by (among other things) one-dimensionality, and *limits* a surface; a surface is *determined* by two-dimensionality, and *limits* a body. A body however is *determined* by three-dimensionality, *but does not limit anything.* The third dimension thus seems to add only further determination, not the limitation of a further kind of entity—for instance something four-dimensional. In other words, the notion of limitation as applied to three-dimensionality comprises only *being limited*, and not *providing a limit*. This feature warrants the distinction between aspects (3) and (4) of three-dimensionality. The explanation of this feature is of course that, at least in Antiquity,[2] three-dimensionality is regarded as the end of the dimension series: it comprises *all* dimensions.

Since the Pythagoreans and certain Platonists seem to have regarded mathematical solids, surfaces etc. as essentially prior to physical solids, surfaces etc., *and* developed the dimension series as an important model for explanation in physics, we often find together references to the *determination* as well as the *limitation* of physical entities. Moreover, since in this context the notion of limit (πέρας) is a representative of the general notion of determination,[3] aspects (3) and (4) tend to be confused completely. At this stage however, it is appropriate to underline the difference between three-dimensionality (and two- or one-dimensionality) when discussed under the aspects of determination and limitation.

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[2] In the context of elucidating a particular part of the history of ancient philosophy it is of course unnecessary to take into account any modern notions of dimensionality involving non-Euclidean space and quantum physics.

[3] Cf. especially the famous Pythagorean συστοιχία (DK 58 B 5), preserved in Arist. *Metaph.* 986 a 22-26, where πέρας and ἀπειρία each head a series of connected notions.

The importance of these distinctions will become clear when we consider several accounts of matter and place in the remainder of this chapter. Henceforward I shall refer to the different aspects listed above by means of the italicized terms. The term 'three-dimensionality' will be used where the distinction between any of the aspects listed above is not relevant or where a choice for one of them has not (yet) been made.

II PLATO AND ARISTOTLE: MATTER, PLACE, AND LIMITS

In the previous chapter we have already seen the extent to which Proclus' discussion of matter depends on the debate regarding the proper interpretation of Plato's *Timaeus*. Here we will point out several characteristics of the *Timaeus* account of matter which will prove useful for understanding the rise of three-dimensionality. The aim of this paragraph is not to defend any specific interpretation of the *Timaeus*, but rather to make manifest the variety of indications it contains. In order to maintain the focus set by our discussion of three-dimensionality above, each of the aspects listed there will be highlighted when appropriate.

1 Plato: the poly-interpretability of the Timaeus

Plato's discussion of the receptacle is found in *Tim.* 48 e 2-53 c 3, and a paraphrase of this well-known text may serve to outline the drift of the argument.[4] Next to the Model (i.e. the realm of the Forms) which is intelligible and has eternal being, and the Image which is visible and subject to generation, Plato introduces a principle of a third kind. He warns that its nature is difficult to grasp and goes on to show why it is nevertheless a necessary explanatory factor. Since apparently the elements turn into each other in a continuous movement and thus lack stability, Plato thinks it safest not to designate them as 'this' (τόδε, τοῦτο) but rather as 'such-like' (τοιοῦτο).[5] Only that 'in which' (ἐν ᾧ) they appear can safely be designated as 'this'. In the same way gold which is continuously being moulded into different shapes is better

[4] The literature on Plato's account of the receptacle is vast. I have benefited particularly from Baeumker (1890) 110-209, Cornford (1937) 177-230, Cherniss (1944) 83-173, Happ (1971) 85-208, and Mohr (1985). Algra (1995) 72-110 provides an important discussion which does justice to the tensions in Plato's account which provoked so many later discussions of the topic.

[5] See Cherniss (1954), E. Lee (1966) 357-360, De Rijk (1986) 267-271.

designated as 'gold' than as e.g. 'triangle', one of the shapes it may happen to have only at a fleeting instant.

It is safe to call the receptacle a 'this' because it never loses its characteristic power (δύναμις) which consists in always receiving everything without being affected in any way whatsoever. This probably implies that it is eternal. In fact it can only be regarded as well fitted out (παρεσκευασμένον εὖ) if it lacks all forms (ἰδέαι) it is supposed to receive;[6] otherwise the likenesses it has adopted on one occasion will interfere with contrary or entirely different shapes entering it on another occasion. Since it is supposed to receive the images properly in every part of itself (κατὰ πᾶν ἑαυτοῦ), such interference would damage its capacity. Besides, the very fact of adopting any feature whatsoever would put an end to its characteristic stability. The formlessness (τὸ ἄμορφον) which Plato establishes in this way also implies that the receptacle is invisible.[7] His emphasis on this lack of forms seems to be the very contrary of our notion of determination. Note, however, that it is unchangeability rather than determination that warrants the use of the deictic 'this'.

Plato goes on to point out that the demand for some kind of receptacle arises from our dream-like conviction that everything that *is* (in the popular mode of speaking) has to be in some place and to occupy space.[8] Moreover we are dealing with images which are not even what they are in their own right (an image as such is different from what it refers to)[9] and may only claim some kind of existence (οὐσία) by existing *in* something else. The things that enter and leave the receptacle

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[6] Note the ambiguity in 50 d 7-e 1 ἐκείνων ἁπασῶν τῶν ἰδεῶν ὅσας μέλλοι δέχεσθαι ποθέν: this may either be explicative ('all those shapes, which it is going to receive from somewhere') or limitative ('[only] those shapes which it is going to receive from somewhere'). The sequel does not clearly exclude the latter possibility because it speaks of perfume base being odourless *as much as possible*, and of wax (?) being smoothed *as much as possible*. Of course these qualifications may be eliminated as irrelevant parts of the analogy, esp. in view of Plato's more rigid ἄμορφον (*Tim.* 51 a 7). However, we shall see that Philoponus interpreted the similar term ἀνείδεον as referring to *relative* formlessness, cf. *Contra Proclum* XI.7 426.24-427.5; see further Chapter 5 p. 255ff. From Philoponus' perspective the letter of Plato's account leaves room for some minimal characteristic as long as it does not interfere with matter's receptivity.

[7] Cf. Plot. *Enn.* III.6 [26] 13.39-43.

[8] Cf. Arist. *Phys.* IV.1 208 b 27-209 a 2 for a similar statement, supported by a reference to Hes. *Theog.* 116-117 mentioning Χάος.

[9] Cf. E. Lee (1966) 353-357.

are images[10] of the things that are (i.e. the Forms),[11] though the way in which they are realized is (again) difficult to grasp.

In short, the third principle has obvious space or extension-like features which are founded on the popular belief that everything that exists, exists *somewhere*. The description 'the nature which receives all *bodies*' (*Tim.* 50 b 6) seems in particular to allude to place. The phrase 'in every part of itself' (*Tim.* 51 a 2) suggests extensionality. On the other hand Plato connects the receptacle's receptivity with the feeble nature of the images which need some support in order to exist at all (*Tim.* 52 c 2-5). This seems to imply that the receptacle also has stuff-like features. In other words, Plato does not distinguish clearly between the different senses of 'in' in the phrases 'to be *in* a place' and 'to inhere *in* something'. In this connection one should acknowledge that it is still a matter of debate whether we should take the comparison of the receptacle with gold to illustrate more than the reception of different shapes without changing its own nature;[12] nor is it clear whether we should understand the comparison with perfume base and smoothed moulding material as pointing out anything but the fact that the receptacle can function properly as a receptacle only if it is neither itself characterized in any way, nor affected by any of the images it receives. So, does the receptacle merely provide the space for the visible universe to appear in? Or is it a constituent factor in a more material sense? Does it already comprise extension? And how can the demand for impassibility (if not formlessness) be met in each of these

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[10] The issue whether these things are phenomenal bodies or qualities is irrelevant as far as phenomenology is concerned; cf. Algra (1995) 99, Cherniss (1954) 129-130. As long as it is not sufficiently clear what kind of Form they are images of (Hotness, Brightness, or only Fire, Earth?) Plato's text is open to either an interpretation in terms of bundle theory or in terms of a simple instantiation of e.g. human beings and other natural entities. Without this distinction, which Plato's text hardly provides, qualities and phenomenal bodies come to the same thing: images of the Forms.

[11] I leave aside the discussion in modern commentaries about the possibility that the things that pass in and out are the geometrical forms of the elements as Plato describes them from 53 c 4 onwards, or quality-like characteristics or the images of the Forms of the elements only. Cf. e.g. Baeumker (1890) 131; Guthrie V, 269-270; Cornford (1937) 182-183.

[12] It is interesting to note that Plot. *Enn.* III.6 [26] 12.28-48 sees occasion to argue against a wider interpretation, probably in order to oppose the harmonization of Plato and Aristotle on this issue (cf. Armstrong *ad loc.* in his Loeb edition of Plotinus, vol. III, p. 260 n. 2). Plotinus argues at length for absolute impassibility on the part of matter in *Enn.* III.6 [26] 6-19, for which he draws on all passages of the *Timaeus* touched on in the main text, see esp. *Enn.* III.6 [26] 13.8-20.

cases?[13] These uncertainties, which haunt modern Platonic scholarship, prove of seminal importance for the ancient philosophical tradition, as we shall see.

Moreover, there is also reason to believe that corporeality and three-dimensionality function at a basic level in Plato's universe. In chapter 1 we have already seen how the explanation of *Tim.* 30 a 3-6 with its 'secondary matter' kept the ancient interpreters of Plato's cosmology divided.[14] When the Demiurge starts to introduce order and hence the cosmos, he 'takes everything visible, which is not at rest but moving in a disorderly way'. What is the relation between this visible material and the receptacle described above? Perhaps we may look at 52 d 2ff, where Plato points out that in a way all three factors (now called Being, Space, and Generation) were present before the generation of the universe. The different powers that appeared in the matrix were not balanced, and influenced each other in a way that caused a movement which separated the four elements, each to their own region in space.[15] This pre-cosmic state of the universe, characterized by the absence of God, is also found in the myth of *Polit.* 272 b ff.: if God were to leave, the cosmos would eventually return to this pre-cosmic state which is designated as being 'body-like' (σωματοειδές).[16] Apparently a body-like nature serves as 'material' for the creative activity of the Demiurge.

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[13] The features listed are apparent from Plato's designations of this third principle in *Tim.* 48 e-52 d: receptacle (ὑποδοχή, ἡ τὰ πάντα δεχομένης σώματα φύσις, τὸ δεχόμενον, πανδεχές, ἕδραν παρέχον ὅσα ἔχει γένεσιν πᾶσιν), matrix or mother (τιθήνη, μήτηρ), space or place (χώρα, τὸ ἐν ᾧ, τόπος), moulding material (ἐκμαγεῖον; cf. gold, perfume base, wax).

[14] See p. 14ff. Proclus' use of three-dimensionality will be discussed below, p. 74ff. For the expression 'secondary matter' and its influence, cf. Baeumker (1890) 142-151, who by the way rejects this 'matter' as mythical and not reconcilable with Plato's premisses. Though I am inclined not to explain away this feature of Plato's account, the issue is irrelevant from the point of view of its reception in later ancient philosophy.

[15] Note the presupposition of extension here. At 52 d 4-e 5 Plato seems to state that the matrix is affected (πάσχουσαν) and moved (σείεσθαι, κινουμένην), contrary to his earlier statements. It is perhaps possible to maintain the receptacle's impassibility by understanding the whole passage as a description of what *appears* to be happening. Another possibility may be to take the receptacle as a constituent of the phenomenal world in which case it could properly be said to move—though not *qua* receptacle. But this is speculation, extending far beyond Plato's words.

[16] Cf. *Tim.* 31 b 4 where τὸ γενόμενον is called σωματοειδές as well. Hence it is possible to understand Plato's text in the sense that the world of generation derives its corporeality from the pre-cosmic chaos.

The precise meaning of 'body-like' is probably to be derived from *Tim.* 53 a 7-b 5 where we read that when the Demiurge started the ordering of the universe he took the 'traces of the elements' and arranged them according to forms and numbers as beautifully and perfectly as could be.[17] The details of the Demiurge's formation of the elements are discussed in *Tim.* 53 c 4-56 c 7, a famous passage which describes the reduction of the elements to four regular solids (pyramid, octahedron, icosahedron, and cube) which are constructed out of two different kinds of triangle. After allotting to each element one of these four solids as its fundamental structure, Plato goes on to describe the various types of fire, water etc. and their 'chemistry'.

The entire account takes as its starting-point the observation that the four elements are bodies and therefore possess depth, which in turn implies that they are limited by surfaces (53 c 4-6)—an example of our notion of limitation. To be a body entails three-dimensionality, which paves the way for the reduction of body to two-dimensional surfaces (the triangles). Though at 53 d 6-7 Plato hints that this reduction could be extended to even higher principles (i.e. line—point—number) this is, apparently, not necessary in an account of the generation of the physical world. In *Leg.* 894 a 1-5 generation is modelled after the complete sequence of dimensions, where a principle (the monad) takes on one dimension, then a second, and finally a third, to reach a stage where perception is possible.[18] From this perspective, solids (and physical bodies because they can be reduced to solids through the elements) depend on their limits, i.e. surfaces; these in turn depend on lines, which depend on points. In the ancient reports on Plato's so-called unwritten doctrines this mathematical approach to physics features prominently.[19] After all this, it is hard to resist the

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[17] The text allows to understand 'as beautiful and perfect as could be' as a restraint on the capacity of the Demiurge (which is usually rejected in Antiquity) or as a restraint arising from the (evil) material, cf. Herter (1957), Mohr (1981) and (1989) 296, Hager (1962).

[18] Cf. Nicol (1930) 125, Cornford (1937) 212 n. 4, Gaiser (1963) *passim*, Drummond (1982).

[19] For the unwritten doctrines see Gaiser (1963), Wippern (1972). Inasmuch as ancient sources from Aristotle onwards discuss these doctrines they play a role in the tradition here to be discussed. Gaiser (1963) Anhang 502-514 provides a survey of sources testifying to the significance of the mathematical model of the dimensions for ontology in Plato's dialogues as well as his unwritten doctrines; see also Reale in Annas (1992) p. 97-99. See e.g. *Rep.* 528 a-b, *Soph.* 235 d, *Polit.* 284 e, *Leg.* 817 e, 819 d.

hypothesis that the 'traces of the elements', especially if they are to be identified with the 'body-like' nature from the *Politicus*, already possess three-dimensional extension—though perhaps not entirely involved in solids and certainly not captured in *regular* solids.[20]

From this section it will be clear that there are starting-points from which one might argue for the presence of extensionality, or even extension, before the cosmos is generated. The receptacle as place seems to entail extensionality. Nevertheless, Plato emphasizes that the receptacle should be entirely formless and forever unaffected, which sounds like a clear rejection of any kind of determination. From this point of view, then, it seems impossible that the receptacle should be identified with anything even remotely corporeal. At some early stage in the creation of the cosmos corporeality appears, which, at least in its organized form of regular solids, is said to consist in having three dimensions before being reduced to its limits, triangular surfaces (limitation). It cannot be denied that this stage exhibits some kind of determination, comprising extensionality and perhaps even extension.

2 Aristotle's criticism of Plato: place and matter

The poly-interpretability of the *Timaeus* probably was one of the main incentives for Aristotle's pertinent criticisms of Plato's cosmogony.[21] In *GC* 329 a 13-15 he complains that Plato's account lacked full determination (διορισμός) precisely because it is not clear whether the receptacle is separated from the elements.[22] Aristotle himself explicitly distinguished several senses of 'in' (*Phys.* IV.3 210 a 14-24), and also distinguished place from matter as being separable from body (*Phys.* IV.2 209 b 21-28). He explains (*Phys.* IV.4 211 b 29-212 a 2) that one might come to confuse matter and place when 'that in which' is considered in the case of something which is not moving and not discrete

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[20] The example of the shape of a triangle in the gold analogy does not seem to be a conscious announcement of the two elementary triangles; the instability of the shape is the issue, and it seems that this instability is reduced to particular modifications of particular regular solids through two specific types of triangles by the Demiurge's activity. On the other hand, if the pre-cosmic chaos is also called 'body-like', there should be no problem in assuming that this corporeality also depended on limitation by surfaces such as triangles, though perhaps not, or not always, the two regular ones chosen by the Demiurge for mathematical reasons.

[21] Cf. Algra (1995) 110-117.

[22] Simplicius regards the involvement of matter in change as a significant difference between Peripatetics (Alexander) and Platonists, *in Phys.* 320.20-36.

but continuous. When something suffers qualitative change, there is something (i.e. matter) *which* is first white and then black; on the same lines one might conceive of something (i.e. place) *where* there is first air and then water. Again, the confusion is solved by pointing out that place should be separable, whereas (Aristotelian) matter is not. Inasmuch as movement is disregarded this concept of 'that in which' cannot be a concept of place relevant to the explanation of physical locomotion—which is one of the motives for Aristotle's own account of place.[23]

Aristotle also complains (*GC* 329 a 15-17) that Plato did not make any use of the receptacle after having said that it is a substrate prior to the so-called elements, as gold is to golden products.[24] Indeed, the pre-cosmic chaos replaces it in the description of demiurgic activity in the sequel of the *Timaeus*. It is not clear, however, whether this criticism entails that Aristotle regarded the pre-cosmic chaos as something entirely different from the receptacle, or as the receptacle after receiving traces of the elements. In particular, it is not clear whether he regarded the pre-cosmic chaos as one layer upwards from the receptacle, as later interpreters of the *Timaeus* did.[25] It does not seem likely that he did, because in that case the receptacle would still function as the ultimate 'thing in which' the traces of the elements and later the sensible bodies exist.

Aristotle's criticism of Plato contains occasional references to the unwritten doctrines. He reports (*Phys.* IV.2 209 b 11-16) that in the unwritten doctrines Plato called matter or the 'participant' (τὸ μεταληπτικόν, τὸ μεθεκτικόν) by a different name, viz. the large-and-small (τὸ μέγα καὶ μικρόν), while still identifying it with place. Since elsewhere (*Metaph.* 987 b 20) the large-and-small are called the matter (ὕλη) of the Forms, Aristotle can formulate the criticism (*Phys.* IV.2 209 b 33-210 a 2) that Plato does not explain why the Forms are not in a place. From these texts and also from *Metaph.* 988 a 23-26 we may gather that Aristotle thought that Plato's material principle was incorporeal.[26]

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[23] Cf. *Phys.* IV.1 208 a 27-32, b 1-8. The other motive is to explain τόπος as the cause of the movement of the elements, *ibid.* 208 b 8-14.

[24] Note that Aristotle interprets the gold analogy as implying his own view of constituent matter.

[25] See e.g. Proclus, below p. 94.

[26] Cf. Aubenque (1982) 311-316.

A crucial text combining several of the features discussed above is *Phys.* IV.2 209 b 1-17, already referred to above. Together with *Metaph.* VII.3 (see below), this passage from Aristotle's discussion of place has been highlighted as a source for Philoponus' as well as Simplicius' notion of matter as an indeterminate three-dimensional extension.[27] Hence it deserves closer scrutiny. Since the interpretation of the term ὁρίζειν raises problems, I leave it untranslated. The text runs:

T10 1. Now if place is what primarily contains each body, it would be a limit, so that the place would be the form or shape (τὸ εἶδος καὶ ἡ μορφή) of each body by which the magnitude or the matter of the magnitude ὁρίζεται; for this is the limit of each body. If, then, we look at the question in this way the place of a thing is its form (εἶδος).
2. But inasmuch as the extension of the magnitude seems to be place, it is the matter (ὕλη). For this is different from the magnitude: it is what is contained and ὡρισμένον by the form, as by a plane and limit (πέρας). Matter or τὸ ἀόριστον is of this nature; for when the limit (πέρας) and attributes (πάθη) of a sphere are taken away, nothing but the matter is left.
3. This is why Plato in the *Timaeus* says that matter and space are the same; for the 'participant' (μεταληπτικόν) and space are identical. (It is true, indeed, that the account he gives there of the 'participant' is different from what he says in his so-called unwritten teaching. Nevertheless, he did identify place and space.) While all hold place to be something, Plato alone tried to say *what* it is. (Arist. *Phys.* IV.2 209 b 1-17; *RevOT*, slightly modified)

Aristotle presents two rival accounts of place, which he conveniently summarizes as 'the (external) form is place' and 'the matter is place'. The latter alternative is explicitly connected with Plato's thought, both in the *Timaeus* and in the unwritten doctrines.[28] Since the word εἶδος is explained by μορφή we are not to think of its technical sense in Aristotle (cf. *Phys.* I.7-9), but rather of the general sense of shape, the outer limit of the body. The reference to 'a plane and limit' points to our notion of limitation.[29] Inasmuch as place can be said to 'contain' something (§2), the same notion of limit is implied.

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[27] Cf. Sorabji *MSM* 9-10; Narbonne (1993) 256-260.

[28] Cf. Plot. *Enn.* III.6 [26] 18.36-41.

[29] The use of the term 'magnitude' (μέγεθος) also points to a mathematical frame of reference: it is the general term for lines, planes and solids together. Here it is applied to physical body *qua* limited by planes. On the possibility that πέρας also comprises the third dimension, see below.

However, it is less clear how we have to interpret the term ὁρίζειν. Inasmuch as ὁρίζειν refers to a border or boundary it may be taken to explain the notion of limit. In that case, in §1 to be a limit is explained by an example of something which is bounded (ὁρίζεται), since a limit is involved in that case. In §2 the phrase 'contained and ὡρισμένον' may point to limitation only, being the complement of containing. On this interpretation τὸ ἀόριστον may refer simply to something which has no boundaries.

On the other hand, ὁρίζειν may refer more generally to determination; the more so since limitation implies determination. From that perspective we may gloss Aristotle's phrase in §2 as 'what is contained (*sc.* by a limit) and determined (as implied by limitation)' (§2). In that case τὸ ἀόριστον may refer to a more general lack of determination. This interpretation seems to be confirmed by the fact that the notion of τὸ ἀόριστον is reached by subtracting not only limit (πέρας) but all affections as well (§2).[30] If this is correct, in T10 Aristotle would make the distinction between limitation and determination explained above.

In some ancient and modern interpretations of this text ὁρίζειν is taken as 'to make definite'.[31] On this interpretation the statement that 'the extension of the magnitude ὁρίζεται' amounts to the statement that the extension of the magnitude (which is apparently in itself indefinite, and which is called matter) is made definite by its limits. In this case 'matter and τὸ ἀόριστον' may refer straight away to extensionality indefinite as to size.

Until now, we have taken πέρας as a clear indication of the notion of limitation and nothing else. However, we know that the Pythagoreans employed a list of contraries, headed by the pair limit—unlimited (πέρας—ἄπειρον) as principles.[32] This pair of πέρας and ἄπειρον also features prominently in Plato's *Philebus:* one should not jump from unity to infinity or from infinity to unity but proceed by means of careful division, paying attention to the πέρας-aspect which always

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[30] Hussey (1983) 105 sees a close equivalence to Aristotle's intelligible matter here, though the parts of Plato's receptacle cannot change position, whereas Aristotelian matter changes position together with the body it is a part of.

[31] Cf. the translation of this text in Sorabji *MSM* 9-10; Sorabji refers to Themistius, Simplicius, Philoponus for this interpretation. Contrast *Metaph.* VII.3 below, where ἀόριστον is clearly explained as 'not to be designated by any of the categories of being', 1029 a 20-21.

[32] The list is preserved in Aristotle, *Metaph.* I.5 986 a 22-26, see DK 58 B 5.

accompanies the ἀπειρία-aspect. For everything is to be regarded as a mixture of both principles. Πέρας in this sense emphasizes definiteness rather than limitation since it comprises all kinds of determination over and above limitation. Against this background the subtraction of affections as well as πέρας may be thought to leave behind the ἀπειρία-aspect, and this could be what Aristotle's ἀόριστον refers to: indefiniteness as opposed to definiteness as a proper constitutive principle. Whether or not the Pythagorean principles of πέρας and ἀπειρία were in Aristotle's mind when he wrote T10, it does leave room for an interpretation from that vantage-point as well.

We saw that Aristotle believed that extension features in Plato's account of the χώρα as a view of place, though at the same time he calls the χώρα 'matter'.[33] Because Aristotle also uses the term ἀόριστος to designate ultimate matter where it is surely to be taken as entirely indeterminate,[34] one might think that in T10 Aristotle is simply pointing out the deceptive likeness between *his own* notion of (prime) matter and a notion of place as extension which consists in their both being contained and determined by form (now probably in the Aristotelian sense) and limit.[35] However, apart from introducing an ambiguity in the interpretation of 'form', it does not help to import Aristotle's notion of matter as an explanation of Plato's alleged confusion. So what notion of 'matter' did Aristotle believe that Plato held? If, on the principle of charity, we grant Aristotle consistency in this paragraph, he must be ascribing to Plato the view that the extension of body is matter and its limits or boundaries form. Then Plato's identification of matter and place as extension would plainly derive from Plato's view of matter. Aristotle may have based this interpretation on a combina-

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[33] Though Plato never used this word for the receptacle, it is understandable that Aristotle does, because to him it represents Plato's attempt to reach the concept which he himself has come to call 'matter'. Aristotle makes clear that Plato was unclear about inherence and did not properly distinguish matter from privation; Aristotle's use of the term 'matter' for Plato's receptacle should probably be qualified by this judgement.

[34] *Metaph.* VII.3, see below. Gill (1989) 29 believes that this text discusses a completely alien view.

[35] So e.g. Sorabji *MSM* 17 n. 51. Aristotle *GC* II.1 329 a 13-24 criticizes Plato for 1. not being clear about separation, 2. the gold analogy which works with alteration though in generation and corruption it is not possible to call something by the name of the thing from which it has come to be (though Aristotle acknowledges Plato's qualification 'the truest thing to say', *Tim.* 50 b 1-2), 3. analyzing the elements no further than the triangles which cannot be the nurse and primary matter.

tion of the extension-like features of the receptacle together with the triangles as boundaries of the regular solids: limit-less extension[36] as opposed to limits.[37]

3 Aristotle's criticism of the Pythagoreans: limits

As we are now acquainted with all varieties of Platonic extension we should consider an Aristotelian text which, on my view, attempts to avoid the lack of distinction that Aristotle ascribes to Plato. This text is *Metaph.* VII.3 1029 a 11-33, which has been the champion for the notion of three-dimensionality in Aristotle ever since Mueller's influential article "Aristotle on Geometrical Objects".[38] Mueller suggested that Aristotle's references to the intelligible matter of mathematical objects be taken as referring to extension: a continuum of extension serving as matter for basic mathematical entities (line, surface, solid), which in their turn serve as matter for more complex mathematical constructs.[39] This interpretation of Aristotle's draws on *Metaph.* VII.3 1029 a 12-18 to show that 'even in a passage where [Aristotle] affirms the difference between quantity and substance, the three dimensions are treated as more fundamental than properties'.[40] Let us take a closer look at this difficult text.

Metaph. VII.3 marks the beginning of a systematic discussion[41] of four possible candidates for primary substance: essence, universal, genus, and substratum. The fourth option is treated first, in VII.3, because 'that which underlies a thing primarily is thought to be in the truest sense its substance' (1029 a 1-2). However, matter, form (μορφή) and the composite are all substratum in a sense. If the form is prior to matter and has a higher degree of being (μᾶλλον ὄν), it will have priority over the composite too (because the composite also comprises matter). This is considered an outline of the nature of substance,

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[36] Because for Aristotle the discussion is about particular bodies, he does not envisage sheer extensionality beyond extension. We saw, however, that Plato's receptacle in itself may exhibit extensionality only.

[37] Note that in this case it would be unfair on the part of Aristotle to accuse Plato of not using the receptacle in his account of generation.

[38] Mueller (1970).

[39] Note the similarity with Plato's receptacle and the elements ordered by means of triangles.

[40] Mueller (1970) 165.

[41] See Wehrle (1994).

viz. that which is not said of a substratum but is that of which the rest is said (1029 a 2-9).[42]

Aristotle provides an illustration with bronze as matter, its outer shape (τὸ σχῆμα τῆς ἰδέας) as form, and the statue as the composite. This illustration does not make clear whether Aristotle is referring to his own notion of matter and form, even though the bronze statue is his stock example. For in view of the sequel where outer limits feature again, the absence of the more technical term εἶδος in this aporetic discussion may be as significant as the rather elaborate description of form as visible shape. Perhaps Aristotle does not intend to choose a specific point of view at this stage of the inquiry.

He continues with the remark that this outline of the nature of substance does not suffice. For one thing, it is unclear: this probably refers to the fact that the substratum criterion still leaves three candidates, as we saw above. But it also turns out that matter, if anything, is substance. The explanation of why this is unacceptable is worth quoting:

T11 1. When everything else is taken away evidently nothing but matter remains. For the rest are affections, activities, and powers of bodies, while length, breadth, and depth are quantities and not substances. For quantity is not substance; but substance is rather that to which these belong primarily. But when length and breadth and depth are taken away we see nothing left unless there is something determined (ὁριζόμενον) by these; so to those who look at it in this way, matter alone must seem to be substance.[43]

2. But by matter I mean that which is not in itself said to be a particular thing nor a quantity nor anything else by which being is determined (ὥρισται). For there is something of which each of these is predicated, and its being is different from that of each of the predicates; for the rest are predicated of substance, while substance is predicated of matter. Therefore the ultimate thing (τὸ ἔσχατον) is in itself neither a particular thing nor a quantity nor anything else. Nor is it the negations of these, for negations also[44] will belong to it accidentally. For those who adopt this point of view, then, it follows that matter is substance.

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[42] The same definition is found in *Cat.* 2 a 12-13.

[43] Cf. Arist. *GC* 320 b 16-17: points and lines are not the matter of body, since these are the *limits* of the matter of body; the matter of body never exists without affections (πάθη) and form (μορφή).

[44] The 'also' seems to imply that everything is accidental to matter—precisely Porphyry's solution of a famous problem in the *Categories*, see below Ch. 4 p. 204-206.

> 3. But this is impossible; for both separability and being a 'this' are thought to belong chiefly to substance. And so form and the compound of form and matter would be thought to be substance, rather than matter. The substance compounded of both, i.e. of matter and shape, may be dismissed; for it is posterior and its nature is obvious. And matter also is in a sense manifest. But we must inquire into the third kind of substance; for this is the most difficult. (Arist. *Metaph.* VII.3 1029 a 11-33)

In §1 Aristotle states that matter is what is left when the three dimensions are taken away. In view of later developments we would like to know whether ὁριζόμενον refers to limitation, definite size or determination in general (which includes limitation). Since the third dimension does not limit anything in the sense defined above, it is likely that his designation of matter as ὁριζόμενον by the three dimensions should not be taken to refer to limitation. Nor does Aristotle differentiate between the three dimensions and their definite size.[45] This interpretation is confirmed by §2 where the verb ὁρίζειν is connected with all categories of being and even their negations (which would still, in a way, imply that something applies to matter).[46] It seems to me that Aristotle is here clarifying the Platonist account we read in *Phys.* IV.2: the notion of mere limitation is definitely replaced by determination. He also leaves aside its Pythagorean account of limit all of which he replaces with his own categories. This entails that in §2 we are denied the possibility of conceiving of the remaining matter as characterized by three-dimensional extension: ultimate matter is truly 'indeterminate' (ἀόριστος). Subtraction of the three dimensions is to be equated with the subtraction of extension as well as extensionality. Subsequently, in

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[45] In *Mem.* 450 a 1-17 Aristotle employs the distinction between quantitative definiteness and indefiniteness when he explains that the mind considers even indefiniteness by means of a φάντασμα which has definite measurements (ποσὸν ὡρισμένον), see Sorabji *MSM* 8. But the addition of ὡρισμένον there rather causes one to think that subtraction of dimensions as mere ποσότητες here does *not* envisage the same subtlety. For a different interpretation see Plot. *Enn.* II.6 [17] 8-15.

[46] Therefore it seems quite unlikely that ποσόν is to be translated as 'd'une certaine quantité' (Tricot [1964] 354), 'specific quantities' (Dancy [1978] 395), 'of a given quantity' (Sorabji *MSM* 6), 'particular quantity' (*RevOT* II 1625, Furth [1988] 188), 'any quantity' (Bostock [1994] 3 at 1029 a 20, while translating '*of* any quantity' at 1029 a 24). The obvious reference to Aristotle's categories of being rather suggests that Aristotle is thinking of the dimensions as belonging to a certain category: line, surface, and body belong to the category of Quantity (*Cat.* 5 a 1-6). For the construction ποσόν λέγεται compare *Cat.* 5 a 38 κυρίως δὲ ποσὰ ταῦτα μόνα λέγεται τὰ εἰρημένα.

§3, Aristotle applies two further criteria of substance to this purified notion of matter. They fail, so that matter is denied its claim to the title of primary substance. Without the purification of §2, however, the separability test would have foundered on the lack of distinction Aristotle accused Plato of: was his primary matter separate or not?

Frede/Patzig, in their valuable commentary on *Metaph.* VII.3,[47] note that the terms 'affections, activities and powers' (§1) are hardly Aristotelian vocabulary.[48] Moreover, it is remarkable that in this context Aristotle takes the trouble to stress the fact that the three dimensions are quantities, not substances. It is not at all in accord with Aristotle's metaphysics to single out the three dimensions as different from other accidents, as indeed the text goes on to point out. Frede/Patzig suggest that Aristotle is here attacking a view different from his own, viz. that 'the limits of body' have a better claim to the title of substance than body itself.[49] After explicitly pointing out that none of the dimensions are substances, Aristotle would be revealing his rejection of this view by immediately passing on to a lower level than had been envisaged so far. If this interpretation is correct, the dimensions would not so much owe their place in VII.3 to Aristotle, who would have regarded them as the first determinations of matter, but to others who had made them more prominent than they should be according to Aristotle.

In order to verify this comment we should consider the possible target of Aristotle's oblique attack. Frede/Patzig speak about the Platonists, and they rightly refer to *Metaph.* VII.2 1028 b 16-18 and to the elaborate discussion in *Metaph.* III.5 1001 b 26-1002 b 11.[50] However, these texts are aimed at the natural philosophers, the Pythagoreans as well as Plato.[51] Since the natural philosophers did not analyse

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[47] Frede/Patzig II, 44-45.

[48] Cf. Plot. III.6 [26] 7.7-15.

[49] Contrast Gill (1989) 26-31 who argues that Plato's receptacle is the target of *Metaph.* VII.3; she regards §2 as Aristotle's explanation of matter in Plato's thought, not as Aristotle's own clarification of the issue; see also Charlton (1970) 138; contrast Frede/Patzig *o.c.* 47, Bostock (1994) 76. Against Frede/Patzig and Charlton (and Bostock) Gill *o.c.* 26 n. 26 rejects the relevance of *Metaph.* III.5 1001 b 26-1002 a 14 (on limits having a claim to be more substantial than bodies; see below p. 97ff.) because it would address another issue than T10. However, §1 argues explicitly against a special position of the dimensions.

[50] Frede/Patzig II 29-30.

[51] So Alex. *in Metaph.* 228.31-231.25 (*ad* III.5 1001 b 26-1002 a 28), using the method of VII.3 as part of Aristotle's discussion against 'the Pythagoreans and

the primary bodies, and simply assumed that nature could be explained in terms of bodies and their attributes, the claim that surfaces are more substantial than bodies obviously goes beyond anything they envisaged. This leaves us with the Pythagoreans and Plato. If we may rely on the ancient reports about the unwritten doctrines, as well as on Plato's hints discussed above, Plato as well as some of his followers[52] adopted Pythagorean ideas about dimensions. The difference between Pythagoreans and Platonists seems to have been that the Pythagoreans located their mathematical entities in nature, as immanent principles,[53] whereas Plato is supposed to have turned them into self-subsistent entities, which Aristotle refers to as 'the things in between' (*sc.* between the Forms and the world of becoming).[54] This idea was developed in different ways by Plato's pupils. At the same time, however, all share the idea that surfaces etc. are ontologically prior to bodies, which is the issue here.

A comparison of *Metaph.* III.5 with VII.3 (see next page) reveals some interesting parallels. At an earlier stage of the inquiry, the method of ἀφαίρεσις[55] was applied to the elements down to their bodily aspect, which is contrasted to their characteristic qualities (or δυ-

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Plato' (230.12) who are believed to represent the 'later and wiser' philosophers (cf. 1002 a 11). Those who think of body as substance and being apparently precede them (1002 a 8-11), and will have to be identified with the natural philosophers. By contrast, Ps.-Alex. *in Metaph.* 462.22-25 (*ad* VII.2 1028 b 13) identifies 'Plato and those around him' as adherents of the view that limits are more substantial than body. Ascl. *in Metaph.* 379.3-4 (*ad* VII.2 1028 b 13) ascribes this view to the Pythagoreans; in *in Metaph.* 211.1-11 (*ad* III.5 1001 b 26) Asclepius ascribes the same view to Plato and the Pythagoreans, who, he believes, improved on the natural philosophers by turning to 'incorporeal powers'; cf. 212.5-11.—Among modern commentators Ross II 162 and Bostock (1994) 70 ascribe the view that limits are more substantial than bodies to the Pythagoreans; Ross *o.c.* rightly notes that at Arist. *Metaph.* 1028 b 19 the Platonic view is given as distinct from it.

[52] Notably Speusippus (*Metaph.* VII.2 1028 b 21-24) and Xenocrates (presumably referred to at 1028 b 24-25).

[53] See Arist. *Metaph.* I.8 989 b 29-990 a 5; I.5 986 a 3-6; III.2 998 a 7-11; XIII.6 1080 b 16-21; *Cael.* III.1 300 a 14-17; *Phys.* III.4 203 a 6-8. Aristotle addresses these views in *Metaph.* M-N.

[54] For τὰ μεταξύ see e.g. Arist. *Metaph.* I.9 991 b 29, 992 b 16-17; II.1 995 b 16-18, II.2 997 b 1-3 etc.

[55] Though the term ἀφαίρεσις (or an equivalent) is not mentioned in *Metaph.* III.5 as in e.g. *Metaph.* VII.3 1029 a 11-12, 16-17, the method betrays itself by the reference to remaining (ὑπομένει 1002 a 3) after the rejection of the other candidates.

Metaph. III.5	*Metaph.* VII.3
1001 b 26-29 The question whether numbers, bodies, planes and points are substances or not, is baffling: if they are not, it escapes us what being is and which beings are substances.	1029 a 10-11 If being a substrate is indicative of substance, matter turns out to be substance; if not, it escapes us what does.
1001 b 29-1002 a 2 This is because affections, movements, relations, dispositions and definitions (λόγοι) are not considered substances because they are said of something and not τόδε τι. The hotness, coldness etc. of the most obvious substances, the four elements, are affections, not substances.	1029 a 11-15 This is because when everything—affections, activities, capacities as well as the quantities length, width and depth—is stripped off ...
1002 a 2-4 Only the body, which is affected by them, remains as a being and a substance.	1029 a 15-19 ... only that to which these belong primarily seems to be substance. That which remains is that which is determined (ὁριζόμενον) by the dimensions, i.e. matter.

νάμεις, cf. 1029 a 13). This may be regarded as the position of some of the Presocratics, which is presented as the point of departure for Pythagoreans and Platonists alike. Cleary[56] has shown that the method of ἀφαίρεσις was common Academic practice, so we may even conjecture that the Academy analysed the problem in the same terms in which Aristotle presents it here.

The Pythagoreans and Platonists continued the subtraction beyond body, stripping off one dimension at a time, and argued that the resulting plane, line, point, and monad[57] constituted even more basic principles than body. Since body is determined (ὥρισται) by them, it is considered possible that they exist without body whereas body cannot exist without them (1002 a 4-14). By means of this familiar implica-

[56] See Cleary (1985).

[57] I.e. the number one, the principle of the number series, cf. e.g. *Metaph.* III.4 1001 a 26-27.

tion test they want to establish the ontological priority of the limits of body.

To our mind this new approach to body turns on a confusion. Because the Presocratics did not take their analysis beyond the elements (Aristotle takes Anaximander's ἄπειρον to be corporeal), they probably understood 'body' to refer to physical, sensible body. Pythagoreans and Platonists now mean to improve the situation by taking 'body' in its mathematical sense as 'that which is characterized by three dimensions' which enables them to take the analysis further to the monad. The Pythagoreans, however, regarded these mathematical entities as the actual building blocks of nature, a view that simply denies our distinction between physical and mathematical body.[58] The Platonists seem to have regarded mathematical entities as self-subsistent; they believed them to be of a higher ontological order, and hence to provide the mathematical structure of the sensible world. Perhaps we may assume that for them too the ontologically prior denotation of 'body' would be that which is characterized by the three dimensions.

It is noteworthy that Alexander, in his comments on this and similar passages, clarifies the term 'body' by opposing physical body (φυσικὸν σῶμα) to mathematical body (μαθηματικὸν σῶμα or ἁπλῶς σῶμα).[59] He follows Aristotle in denying that mathematical bodies exist separately or within substances as self-contained units, but grants mathematical entities existence in thought or 'from subtraction' only.[60] Consequently, in discussing Aristotle's notion of intelligible matter Alexander is happy to identify it as 'the three-dimensional'.[61] This is indeed a very effective way of blocking Pythagorean speculations about the mathematical structure of the universe: the principles of

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[58] Ps.-Alexander *in Metaph.* 814.22-29 (cf. *Metaph.* XIV.3 1090 a 30-35) remarks that for this reason they escape Aristotle's aporia how the properties of mathematicals can belong to physical bodies if mathematicals exist separately.

[59] Cf. Alex. *in Metaph.* 73.2-8 and esp. *Quæst.* I.10 20.23-4 where the division of body into physical and mathematical is regarded as exhaustive; cf. Ps-Alex. *in Metaph.* 549.8-9.

[60] For the notion of abstraction in the commentators, see Mueller (1990). E.g. Alex. *in DS* 111.11-19 argues that physical bodies cannot be constituted out of mathematicals because these exist not ἐν ὑποστάσει but only ἐν ἐπινοίᾳ; cf. *in Metaph.* 52.11-19, 199.19-22. Cf. Taormina (1994) for this opposition in the commentators.

[61] Ps.-Alex. *in Metaph.* 510.3-5, 515.26-28, 562.14-17. Cf. Mueller (1970) 103, Annas (1976) 30.

nature they propose exist only in the mind, not in nature. Further below we shall see how the Neopythagoreans answered this kind of Peripatetic criticism.[62]

Aristotle raised an impressive series of other aporiai against this Pythagorean view:

1. since these entities are invisible, they cannot be part of sensible bodies, and hence not substances (1002 a 15-18);
2. they are thought to be divisions of bodies in the direction of length, width, and depth (1002 a 18-20); their being substances would also have implications for the account of generation, for divisions come to exist or cease to exist (as a consequence of the division or combination of bodies) without the usual process of generation or corruption (1002 a 28-b 11).
3. if it is accepted that shapes do not exist as self-contained units (ἀφωρισμένον) within solids (e.g. Hermes in the stone, half a cube in a cube), nor will planes, lines etc. If these are considered more of a substance than body, but they turn out not to be substance at all (*sc.* because they fail to meet Aristotle's criterion of separability), much less will body be substance (1002 a 20-28).

The third argument links up with the problems surrounding the Pythagorean idea that the mathematical principles inhere in sensible bodies, which is referred to at e.g. *Metaph.* III.2 998 a 7-11. Aristotle discusses the problem of the ontological status of mathematical objects more systematically in *Metaph.* XIII.1-3, where he adds more aporiai. In XIII.2 Aristotle shows that the argument turns on a confusion between logical and ontological (or natural) priority. Planes, lines etc. are indeed prior to bodies logically speaking: the definition of body contains the definition of plane and line. This priority, however, is to be distinguished from ontological priority: the body is the only independent existent; planes, lines etc. are present in body in a non-substantial way, i.e. like matter. *Metaph.* XIII.3 explains how we are to reach them by means of ἀφαίρεσις as aspects of physical bodies, by taking these e.g. *qua* having three dimensions (i.e. *qua* solid). The method of subtraction now emerges as a device for discovering *logical* priorities by focusing on aspects of sensible substances which lack separate existence. At the same time subtraction has lost some of its visual force and has become a theoretical tool, suited to Aristotle's more refined philosophical apparatus.

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[62] See p. 82ff.

With this in mind, the two columns of the comparison above can be read one after the other as a continuing account. The analysis of the Presocratics (down to body) was refined by the Pythagoreans and Platonists who claimed the priority of planes, lines etc. to body. Subsequently, Aristotle brushed aside the dimensions, along with the mathematical objects they constitute, because of their non-substantial way of being, i.e. *in* sensible bodies. Hence in *Metaph.* VII.3 Aristotle performs the subtraction anew, though in a different way. Starting out with a physical body (we may think of an element again[63]), he subtracts all three dimensions together with other accidents and thus reaches matter. On this line of reasoning, which only considers 'being a substrate' as a criterion of substantiality, the prime candidate for substance turns out to be matter.

It should be considered that the position of the three dimensions at the end of the subtraction series in VII.3 need not reflect any judgement on Aristotle's part that the dimensions constitute the *first* determination of matter. Inasmuch as they are accidents, they are equal to the 'affections, activities and powers'. They only get special attention because Aristotle wants to stress his divergence from his predecessors, who agreed as to the status of the other accidents which may therefore be dismissed first. It seems at least possible that the statement in 1029 a 16-19, that nothing but matter appears to remain after stripping off the *dimensions*, is merely a consequence of this mode of presentation. However, Aristotle retains the order of his predecessors as a logical one, and his elaborations of the exactness of the mathematical sciences and their relation to the mixed sciences in *Metaph.* XIII.3 show that in this context the Platonic subtraction by one dimension at a time still holds: the hierarchy of arithmetic–geometry–stereometry is based on it. The fewer dimensions are taken into account, the more 'exact' the science is. The so-called mixed sciences (music, astronomy, and mechanics) rank lower because they take more aspects of nature into account than their mathematical counterparts (e.g. astronomy is geometry applied to nature).

Now that we know what Aristotle's target in *Metaph.* VII.3 must have been we can conclude this section by means of a full comparison of *Phys.* IV.2 (T10) and *Metaph.* VII.3 (T11). In the former text, extension is likened to matter, and we learn that Plato's confusion concerning place and matter rests precisely on this lack of distinction be-

[63] So does Plotinus in an interesting echo of this passage, Plot. II.6 [17] 2.8-14.

tween extension and matter. Hence it is possible to interpret T10 as concerning the subtraction of extension only, with extensionality staying behind. However, in the latter text (T11), the distinction between the dimensions and matter is stressed, because it signals the author's own position in this debate. All notion of extensionality—and hence of extension—is removed in order to arrive at a clear conception of matter. This means that the lack of determination (cf. τὸ ἀόριστον) in *Phys.* IV.2 209 b 9 may be of a different kind than the lack of determination in *Metaph.* VII.3 1029 a 20-21.

This difference affects the significance of the two texts for the tradition. *Phys.* IV.2 speaks about a comparison (for Plato: an identification) of extension with matter, and may be thought to anticipate the conclusions of Simplicius and Philoponus—though only in that particular respect, the concept of three-dimensional matter. *Metaph.* VII.3, on the contrary, plainly contradicts the conclusions of Simplicius and Philoponus, by keeping dimensions and matter apart. Therefore, this text seems to suggest the common opinion which both Simplicius and Philoponus are opposing, namely that three-dimensionality is to be considered the last-but-one level in a series of subtractions that ends with the ultimate substrate, matter.

Again, though both *Phys.* IV.2 and *Metaph.* VII.3 envisage a reduction to the *lowest* principle, viz. matter, *Phys.* IV.2 does so in response to a similar reduction in Plato's thought, whereas *Metaph.* VII.3 rather opposes a reduction to the *highest* principles current in Platonist thought. This latter reduction was to culminate in the so-called 'negative theology', where the nature of the highest principle (whether pagan or Christian) is expressed through the process of negating even the loftiest predicates in use for anything intelligible or perceptible.[64] However, because Aristotle turned the Platonic ontological scale of priority into a logical one, and put the sensible substance at the centre of his philosophy, in his case an analysis in terms of dimensions reaches, again, the *lowest* principle. *Metaph.* VII.3 therefore is more fundamentally opposed to Platonism than *Phys.* IV.2, which constitutes more of a correction.

But there are more differences between texts T10 and T11: the former text has Plato's account of the receptacle as a target, whereas the latter text is concerned with the debate about the substantiality of the

[64] In this development, the first hypothesis of Plato's *Parmenides* also played a significant role, see below p. 75 and n. 77.

limits of body, claimed by Pythagoreans and Platonists alike. As we shall see, the ancient commentators did not always discuss the texts from these respective points of view. One reason for this was surely the tendency to harmonize the doctrines of Plato and Aristotle and to reduce both to Pythagoreanism, a tendency which was insensitive to differences between the three. Nevertheless we may expect their comments on these texts to reflect, if not to contribute to, the debate about the interpretation of Plato's *Timaeus* (esp. the receptacle) and the status of the limits of body and mathematical objects respectively.

4 Aristotle's own notion of matter

What was Aristotle's own position in these discussions? This much is clear: Aristotle believes that Plato's *Timaeus* is unclear with regard to place and matter; furthermore, the limits of body have no ontological priority. But since Aristotle's own view of matter had enormous impact on later thought we should now turn to it.[65]

Aristotle introduced the notion of matter as a result of his analysis of becoming, described in *Phys.* I.7-8. There he first argued that becoming requires two principles, opposites, which in their turn require a third principle as their substrate (ὑποκείμενον), because, being opposites, they cannot affect each other. The substrate is one in number, but has two aspects which are formally different: on the one hand matter (ὕλη), out of which that which becomes (τὸ γιγνόμενον) becomes in a non-accidental way; on the other hand privation out of which that which becomes, becomes accidentally. Privation is in itself non-being and is not immanent in that which becomes; matter is non-being only accidentally, and is immanent (ἐνυπάρχον) in that which becomes.

Although this analysis can easily be seen to obtain in accidental change (from which Aristotle usually takes his examples), Aristotle holds that there is a substrate in generation and corruption too. This can be shown by analogy, i.e. a strict four-place proportion such as bronze :: statue = matter :: substance (or being or τόδε τι).[66] The numerical identity and the being of matter differ from that of the τόδε τι.

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[65] Narbonne (1993) 237-249 traces parts of Aristotle's influence on Plotinus' concept of matter.

[66] *Phys.* I.7 191a 7-14. Cf. Owens (1969) on the strength of an argument by proportion (ἀναλογία).

Consequently, there are three principles: matter, the object of definition (i.e. form) and privation (its opposite).

By parsing the expression 'generation out of non-being' as 'generation out of non-being *inasmuch as it is non-being*', i.e. accidentally in virtue of privation, Aristotle obviates the Parmenidean denial of change because on that view nothing could come into being, neither out of non-being nor out of being.[67] Aristotle too rejects generation out of unqualified non-being.[68] He also refers to a solution to these problems in terms of potentiality and actuality.[69] From the *Metaphysics* we may supply that matter provides the specific potentiality out of which its corresponding actuality is realized, under influence of something already having the same actuality ('man begets man') or some relevant actuality at least (the house in the mind of the architect).[70]

A strikingly similar enumeration of three principles is found in *GC* II.1 with regard to the generation and corruption of the primary bodies, the elements:

T12 1. Our view is that there is a matter of the perceptible bodies, but that this is not separable but is always together with a contrariety, from which the so-called 'elements' come to be. A more precise account of them has been given elsewhere. Nevertheless, since this is the way in which the primary bodies are from the matter, we must give an account of these also, regarding, certainly, as a principle that is really first, the matter which, though inseparable, does underlie the contraries (for neither is the hot matter for the cold nor the latter for the hot, but the substratum is matter for them both);

2. So first that which is perceptible body in potentiality is principle, and secondly the contrarieties (I mean, for example, hot and cold), and only thirdly fire and water and the like. For these change into one another, and it is not as Empedocles and others say (for there would be no alteration); but the contrarieties do not change (Arist. *GC* II.1 329 a 24-b 2; transl. Williams [1982]).

This passage apparently combines the solution of *Phys.* I.7 in terms of contraries and substrate (§1) with the same solution in terms of potentiality (§2). The contraries hot, cold and the like have matter as their

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[67] *Phys.* I.8 191 b 6-10, 25-26.

[68] Cf. e.g. *Phys.* I.8 191 b 13-14.

[69] *Phys.* I.8 191 b 27-29.

[70] *Metaph.* IX.6 1048 a 36-b 6; VIII.1 1042 a 27; VIII.6 1045 b 17-19; VII.7 1032 a 13-19; 1033 a 10-11, 24-28; XII.3 1069 b 36-1070 a 2. For more references see Charlton (1970) 71-73. I do not agree with his opinion that the matter-form distinction is equivalent to the distinction between constituent and thing constituted.

substrate, and this is really the first principle. From the subtraction series discussed above we know in what sense it is first, viz. as ultimate subject, though not in terms of substance.[71] The matter of the elements is potentially a (particular kind of) perceptible body because the contraries that characterize the elements are the most elementary perceptible attributes, and the elements the primary bodies. Thus, focusing on the aspect of matter, that out of which element *b* comes into being has the potentiality of becoming element *b*, i.e. becoming perceptible and a body in the way *b* is. Focusing on the aspect of privation, however, that out of which element *b* comes into being is neither body nor perceptible in the way *b* is. In fact the persistence of an imperceptible substrate was mentioned as a means of distinguishing generation and corruption from other, accidental, changes in *GC* I.4 319 b 10-18.

If we here apply the same focus outlined in *Phys.* I.8 we cannot but infer that the privation and matter in question belong to something else out of which the element comes into being, as the two aspects of that thing's being something 'out of which'. Since, for reasons outlined elsewhere,[72] the elements change into each other, that out of which element *b* comes into being is in fact element *a*. Indeed, matter is called inseparable and does not exist on its own.[73] If, then, it always exists in combination with contraries it is always at the same time actually another element.[74] Nevertheless, there is a difference in being: being element *a* is different from being the matter out of which element *b* comes into being, even though both entities are numerically the same as Aristotle stresses on several occasions.[75] Hence, element *a* can be said to be element *b* potentially, *qua* being the matter out of which element *b* comes into being. At the same time it is element *a*, *qua* being characterized by a certain pair of elementary qualities.[76]

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[71] Cf. *Phys.* I.6 189 a 31-32 suggesting that the substrate is in a sense prior; at I.7 191 a 19-20 the discussion at *Metaph.* VII.3 is implicitly announced.

[72] Cf. *Cael.* III.6.

[73] Cf. e.g. Charlton (1970) 73.

[74] Cf. e.g. *Phys.* IV.5 213 a 1-4.

[75] *GC* I.5 (see further Chapter 3 p. 138ff); *Phys.* I.6 190 a 14-17, I.7 190 b 35-191 a 3, 191 a 12-15.

[76] For the emergence of the traditional concept of prime matter it may be significant that this relativity is entirely lost in Alex. *DA* 3.28-4.4, where it is affirmed that there is one formless matter which is the substrate for the simple bodies. As Matter (1964) 207 notes, Alexander is here closer to Plotinus than to Aristotle.

In *Phys.* I.9 Aristotle compares his results with Plato's doctrine. He acknowledges that Plato saw the need for a substrate, which he designated as non-being and the large-and-small, but did not distinguish matter from privation (obviously, the large-and-small taken as two different things are not equivalent to matter and privation). This position leads to consequences unacceptable to Aristotle, e.g. the claim that that which is not strives for its opposite, and thus for its annihilation, which is contrary to nature. Nor is matter itself female (Plato compared it with a mother, *Tim.* 50 d 3) nor ugly nor bad, only accidentally. Finally matter comes out as 'that primary (i.e. proximate) substrate of each thing, out of which as a constituent and not in an accidental way something comes to be' (*Phys.* I.9 192 a 31-32). It cannot come into being, for that would require a prior matter; nor can it perish, for that would mean a return to the ultimate substrate it is itself. Hence matter is ungenerated and imperishable.

If we compare Aristotle's accounts of matter and place with his criticisms of Plato we see he aimed at creating clarity with regard to the obscurities he saw in Plato's thought, as the following table shows:

Plato	Aristotle
1. The *receptacle* seems to be both that in which (χώρα, τόπος) and that out of which (like gold, ἐκμαγεῖον).	1. *Matter* is different from *place.*
2. When the Demiurge begins to create the cosmos he takes *something which is visible and in disorderly motion*, already containing traces of the corporeal.	2. *Matter* itself lacks all determination, including extensionality; *matter* only moves accidentally, i.e. because the composite moves.
3. The *receptacle* is entirely formless in order to guarantee the unfailing fitness for receiving the images by which it is characterized.	3. *Matter* itself lacks all determination, including extensionality.

4. The *receptacle* is not affected by whatever comes into being in it; from this point of view it has separate existence.	4. *Matter* is the substrate in which the contraries inhere; it is a constituent factor of a substance, which cannot exist separately; nor is it a self-contained part of a substance. Hence it is numerically identical with the substance, though it differs in being and (consequently) in account.
5. The *receptacle* is that in which the natural bodies or images of the Forms are said to come into being and from which they vanish in a continuous flux. The receptacle is called place and space, and has to be three-dimensional if natural bodies come to be in it.	5. *Place* is the two-dimensional boundary of the surrounding body, which coincides with the boundary of the surrounded body without being part of it. There is no such thing as self-subsistent space.
6. The *receptacle* can probably only be said to be shaken because the images in it move.	6. *Place* does not move along with the body which is in it, whereas *matter* does move along with the composite body it is part of.

III THE LEVEL OF THREE-DIMENSIONALITY IN LATER PLATONIC THOUGHT

This survey of the main Platonic and Aristotelian testimonies concerning 'matter', and in particular of the problems to which the interpretation of these passages may give rise, provides the starting-point for our interpretation of Neoplatonic texts concerning three-dimensionality. For to a large extent the Neoplatonic texts we shall be discussing are commentaries on Plato or Aristotle. Since this study is confined to elucidating the *Neo*platonic background of Philoponus' theory of prime matter, I shall discuss Middle Platonist views of matter only when specific Middle Platonists are mentioned in Neoplatonist discussions of matter. Hence, we now turn to the development of several strands of Platonic and Aristotelian thought in the Neoplatonic commentary tradition.

We have already noticed that Philoponus regards the level of three-dimensionality as an integral part of the received opinion on matter.

ı we attempt to verify this presentation of the *communis opinio* irst stop should be with Proclus, who is after all Philoponus' tar- ı the *Contra Proclum.* Indeed, in Proclus' work we find several ıtions that three-dimensionality had acquired an important posi- n the stratification of the lower levels of the universe.

'oclus' Commentary on the Parmenides

well-known that the *Parmenides* of Plato provided an important ng-point for the development of Neoplatonist metaphysics. The ıypothesis (137 c 4-142 a 8), which denies a list of attributes to 'armenidean One, constitutes an important source for negative ɔgy, and for the establishment of a One that transcends Being.[77] It surprising, then, that Proclus comments on the first hypothesis at ı (*in Parm.* 1089.17-1244.5). In this part of the commentary we ɔncounter the unqualified body (ἄποιον σῶμα) familiar from our r discussions.

ato's first hypothesis starts from the assumption 'If the One is t cannot be something else, i.e. many' (*Parm.* 137 c 4-5). Since a ɔ is many because it consists of parts, it follows that the One, if it be one, can neither be a whole nor have parts—which would im- s being a whole (137 c 5-d 2). Since beginning, middle and end onsidered parts, it follows that the One has neither beginning, le nor end (137 d 3-6). Since beginning and end are each thing's (πέρας), the conclusion that the One has neither leads to its being ıited (ἄπειρον) (137 d 6-8). Hence the One will have no shape ɹα) either, since both circular and straight shapes imply bounda- ἔσχατα) (137 d 8-138 a 1).

ith regard to the conclusion that the One is unlimited (ἄπειρον), us raises the question in what sense the One is unlimited (1118.9- He indicates that this was a customary question to ask in connec- vith this passage of the dialogue. He provides several traditional ers, based on the application of as many different notions of ɔov to the One (1118.10-33):[78]

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sample of secondary literature: Dodds (1928), Festugière (1954) 22-23, Rist ɔ), Krämer (1964), Whittaker (1969ab), Trouillard (1973), Gadamer (1983), y/Westerink (1968) Introduction lxx-lxxxix, Meijer (1992) Ch. 1.

or a slightly different enumeration of senses, see Procl. *in Tim.* I 453.15-21. ıker (1976) 157 points out that ἄπειρον in relation to the First Principle is d from Plato *Parm.* 137 c 4-d 8; he notes an interesting use of ἄπειρον in n to God in Clem. *Strom.* V.12.81.5-6, in the sense of ἀδιάστατον (156,

1. untraversable (ἀδιεξίτητον) and incomprehensible (ἄληπτον), i.e. by all that is secondary to it;[79]
2. being the limit of all, i.e. being the outer limit beyond which there is none;[80]
3. being of unlimited power (ἀπειροδύναμις) and generative of all things, in bestowing unlimitedness and the gift of itself to the totality of beings;[81]
4. transcending Intellect if that is considered as limit (as well as transcending Soul in virtue of the only other predicate affirmed of the One in the first hypothesis, 'motionless' [*Parm.* 139 a 3 ἀκίνητος], when Soul is considered as the principle of motion).

Though Proclus finds something attractive in all these views, he commends his readers to follow his master Syrianus for the proper answer to the question. One should first survey all orders of Unlimitedness, pair them to all corresponding processions of Limit and then see what ἄπειρον in the *Parmenides*-passage denotes (1118.33-1119.4).

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which should not be translated as 'infinitely small' but as 'without extension'), which is not listed by Proclus. Cf. Mansfeld (1988) 97, 104-105.

[79] Ἄπειρον as untraversable derives from Aristotle's initial classification of its senses, *Phys.* III.4 204 a 2-7. —As Morrow/Dillon (1987) 460 n. 96 remark, this type of ἄπειρον as applied to the One is criticized in Plotinus *Enn.* VI.9 [9] 6.10-12 and hence may reflect a pre-Plotinian view. Proclus incorporated this notion in Procl. *ET* prop. 93 with reference to lower realities: everything below the One (except Limit and Unlimitedness) has limit, and therefore participants in Unlimitedness can only be unlimited inasmuch as they cannot be exhausted nor fully grasped by things secondary to them; because of their own limit they are not unlimited to themselves, let alone to their causes, see Dodds *ad loc* 248-249. One may wonder whether, as Dodds claims (*o.c.* 248), Matter is unlimited in the sense of being *below* limit, for (a) in *ET* prop. 87-96 only the One is excluded from the Limit and Unlimited, and (b) in *in Parm.* 1119.6-8 (discussed below) Proclus clearly treats matter as a manifestation of Limit-Itself. Cf. also Procl. *in Tim.* I 440.28-441.2; *in Eucl.* 5.11-7.12, *TP* III.8-10.

[80] This view had been adopted by Plotinus (see previous note). Morrow/Dillon *l.c.* suggest that Proclus derived the second view and the criticism that follows from Porphyry. For this notion of limit, compare Arist. *Metaph.* V.17 1022 a 4-5.

[81] Porphyry was the first to use the term ἀπειροδύναμις, though of the soul (*Sent.* 37, 43.9 Lamberz). Morrow/Dillon *o.c.* 461 n. 97 suggests the third interpretation be ascribed to Iamblichus. Plotinus *Enn.* VI.9 [9] 6.7-12 clearly wants to interpret τὸ ἄπειρον in relation to the One as pointing to its being the greatest in *power*, which he goes on to explain in terms of always transcending anything we may think of (see our number 1). See Meijer (1992) 199. Proclus assigns this type of ἀπειρία to Intellect as the mover of the heavens (*in Parm.* 1119.23-30) and of inexhaustible power (*ib.* 1120.8-10); Time is unlimited κατὰ τὴν δύναμιν inasmuch as it proceeds numerically (*ib.* 1119.40-1120.1; cf. Arist. *Phys.* III.6 206 a 25-29), whereas Eternity is itself δύναμις (*ib.* 1120.19-20).

Accordingly, Proclus lists ten manifestations of Unlimitedness, starting from below with matter (1119.4-1121.23); then he surveys the ten corresponding manifestations of Limit, now from the top downwards (1121.23-1123.21). Afterwards he returns to the question in what sense the One is to be called unlimited (1123.22-1124.37). There he concludes that unlimitedness is not affirmed of the One in the same way as it is affirmed of the unlimitedness in beings: in that sense it should rather be denied to the One. He lays down the rule that the One should (a) either completely transcend such a contrariety, or (b) lend its name to the prior contrary (as with the contraries one-many, cause-caused). Part (b) excludes the affirmation of unlimitedness of the One, since limit is obviously prior. Hence negation of the prior contrary is to be preferred. Indeed, the One is unlimited because it is beyond all measure (ὑπὲρ πᾶν μέτρον).[82] As ultimate final cause the One is also unlimited in the sense of having a cause; it is the measure of everything for it provides being, power as well as the goal for everything.[83] Nor does the One have a limit with reference to itself, for it has no beginning, middle or end, as was stated in the *Parmenides*-passage under discussion.

Interesting though this argument may be, the lists of manifestations of Limit and Unlimitedness interest us most, because they constitute a summary of Proclus' entire scheme of things from Limit and Unlimitedness down to and including matter. Since we are interested in prime matter and three-dimensional extension, I confine my discussion to the lowest levels of the hierarchy, which are the following:

Limit	level	Unlimitedness
generation, viz. the invariability of forms	7	generation, viz. ceaselessness and variety
particular quantity	8	the more and less in the first qualities
unqualified body: a definite whole which is the substrate of the universe	9	*unqualified body*: divisibility
immanent forms	10	matter

[82] Here, *in Parm.* 1124.16, Proclus refers to *Leg.* IV 716 c 'God is for us rather the measure (μέτρον) of all things'.

[83] I.e. the One is regarded as the cause of the entire triad of Remaining, Procession, and Reversion.

This survey in Proclus[84] is strikingly similar to Philoponus' descriptions of the *communis opinio* we have seen in the previous chapter.[85] Between (prime) matter and the first qualities (among which we may expect to find the qualities of the elements) we find the level of unqualified body. This confirms our expectation that the *communis opinio* Philoponus describes in *Contra Proclum* XI.1-2 agrees with Proclus' doctrine of matter. The description of the two lowest levels deserves to be quoted in full:[86]

Limit-Itself (αὐτόπερας)	
unqualified body (ἄποιον σῶμα)	Ninthly, unqualified body as a whole is limit; for it is not unlimited in size, but it is of the same extent as the universe; for it must as a whole be said to be the substratum of the universe.[87]
enmattered form (τὸ ἔνυλον εἶδος)	A tenth type of limit is the form-in-matter itself, which holds together matter and bounds its boundlessness and shapelessness, and it is this, indeed, solely that some people think of when they refer limit and unlimitedness to matter and form alone.[88]

[84] A similar passage is to be found in *TP* III.8 33.3-34.11 S/W, although the level of unqualified body is not mentioned there.

[85] See Chapter 1, p. 21ff.

[86] The translation is by Morrow/Dillon, slightly changed. For the sake of comparison I have reversed the order of Proclus' list of the manifestations of the Unlimited (see following notes).

[87] Procl. *in Parm.* 1123.11-14: Ἔννατον ἄποιον σῶμα ὡς ὅλον πέρας ἐστίν· οὐ γὰρ ἐστι κατὰ μέγεθος ἄπειρον, ἀλλὰ τοσοῦτον ὅσον τὸ πᾶν· δεῖ γὰρ ὅλον ὑποκείμενον λέγεσθαι τοῦ παντός.

[88] Procl. *in Parm.* 1123.14-18: Δέκατον αὐτὸ τὸ ἔνυλον εἶδος, ὃ κατέχει τὴν ὕλην καὶ περιορίζει τὸ ἀόριστον αὐτῆς καὶ ἄμορφον, εἰς ὃ καὶ ἀπιδόντες τινὲς μόνον, εἰς ὕλην καὶ εἶδος ἀνάγουσιν τό τε πέρας καὶ ἄπειρον. Note the chiasmus in the last clause; see T10 for a similar comparison.

Unlimitedness-Itself (αὐτοάπειρον)	
unqualified body (ἄποιον σῶμα)	It may be seen also in unqualified body in respect of division; for this is the entity which is primally divisible to infinity, in so far as it is the first which is extended.[89]
matter (ὕλη)	Unlimitedness, then, if we start from below, may be viewed in Matter because it is unlimited and shapeless and formless of itself, whereas the forms and shapes are limits of Matter.[90]

Interestingly, Proclus provides us with part of the explanation for why unqualified body occupies the last-but-one position in the universe. It is a manifestation of Limit because it has a definite size (the size of the universe as a whole) and serves a well-defined purpose: it is the substrate of the universe. Here we find important confirmation that the level of unqualified body had already taken over the role of primary substrate from traditional prime matter in Proclus' days.[91] Moreover, the identification of unqualified body with the substratum of the universe implies that it has a definite size. We may surmise that matter, on the contrary, lacks definite size. Unqualified body is also a manifestation of Unlimitedness, inasmuch as it is infinitely divisible. It holds the position it has because it is the first level (from the bottom upwards) which exhibits this feature: it is the first extension. Hence it is implied that matter is devoid of extension. Therefore Proclus has clarified Plato's account of matter to a considerable extent: matter lacks even the most tenuous kinds of determination, extension and size. At the same time he confirms the traditional abstraction series: three-

[89] Procl. *in Parm.* 1119.9-11: θεατέον καὶ ἐπὶ τοῦ ἀποίου σώματος κατὰ τὴν διαίρεσιν· ἐπ' ἄπειρον γὰρ τοῦτο πρῶτον διαιρετόν, ἅτε πρῶτον διαστατόν. For divisibility as the corporeal manifestation of Unlimitedness, cf. *ET* prop. 80, 74.31-32 Dodds.

[90] Procl. *in Parm.* 1119.4-8: Τὴν τοίνυν ἀπειρίαν, ἵνα κάτωθεν ποιησώμεθα τὴν ἀρχὴν, θεατέον μὲν καὶ ἐπὶ τῆς ὕλης, διότι ἀόριστος καθ' αὑτὴν καὶ ἄμορφος καὶ ἀνείδεος, τὰ δὲ εἴδη καὶ αἱ μορφαὶ πέρατα τῆς ὕλης. The epithets of matter are Platonic vocabulary; see also T10.

[91] To this extent the remark by MacCoull/Siorvanes (1992) 162 that the Neoplatonists rejected Aristotle's aether because they adhered to the Platonic notion of space, the 'receptacle' of all the universe, should be modified to include three-dimensional extension as the common substrate.

dimensionality and the divisibility it implies are the first characterizations of matter; qualities come afterwards.

It is clear that Syrianus and Proclus regard the Pythagoreans as the source for the doctrine of Limit and Unlimited as principles.[92] Plato was thought to have been inspired by the Pythagoreans in this respect.[93] The discussion at *Philebus* 23 b 5-27 c 1 plays an important

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[92] Syrian. *in Metaph.* 165.33-166.8; Procl. *in Tim.* I 176.6-177.2. See De Vogel (1959) who suggests that Pythagoreanism was initially dualist, but developed a monist tendency under the influence of Plato (cf. Dodds [1928] 135-136; see below n. 99). She traces the monist development from Alexander Polyhistor to Proclus, emphasizing the doctrine of the two matters in Plotinus (*Enn.* II.4 [12]), who, she claims, achieved a convincing interpretation of several sources on Plato. According to De Vogel, Arist. *Metaph.* I.6 can only be understood by assuming two levels of ἄπειρον. Cf. Merlan (1965).—One should be careful, however, when Neoplatonic commentators attribute a certain doctrine to a certain ancient authority, as Sheppard (1982) 7 has pointed out: Syrianus cheerfully conflates Platonic, Pythagorean and Orphic principles whenever it suits him. Lautner (1994b) 116 reached the same conclusion with regard to Neoplatonic theories of self-awareness.

[93] Syrianus mentions *Ep.* 312 e, *Rep.* X, the *Philebus,* and the *Parmenides* for the relation between the one and Limit/Unlimitedness, cf. Syrian. *in Metaph.* 165.33-166.8. According to modern interpreters (e.g. Dodds 247 n. 2; Merlan [1965] 151-2 with further references) Proclus never succeeded in explaining whether Limit and Unlimitedness are aspects of the One (its existence and power respectively) or self-subsistent (if that is a contradiction to the Proclean mind). Nevertheless, in all major accounts of Limit and Unlimited (*in Parm.* 1118.9-1124.37; *ET* prop. 89-92, 152, 159; *in Tim.* I 176.6-177.2, 384.24-385.17; *in Eucl.* 5.11-7.12, *in Parm.* 805.33-40; *TP* III.8-10) Proclus makes it perfectly clear that the One transcends both principles, mainly on the basis of *Phil.* 23 c 9-10 'We said that God created the Unlimited and the Limit of beings'. Proclus' lemma on *Tim.* 31 a 2-3 (*in Tim.* I 436.6-438.17) is particularly informative for the discussion: initially the One is said to be responsible for the monadic aspect of the cosmos, and to be the only cause before the Model, i.e. the whole of forms in Intellect. Further on (437.1ff) it is suggested that the Model combines unity and diversity, and now Limit and the Unlimited are introduced. At this point Proclus halts and promises further discussion (437.24-25). He reminds his readers of two different interpretations of the text at hand: does Plato distinguish only One and Multitude (for πότερον is used to refer to a pair of possibilities 'by the ancients', ὑπὸ τῶν παλαιῶν, 437.29), or three principles: the One, limited multitude and the unlimited. With Porphyry and Iamblichus Proclus chooses the latter, which shows that he is following an already traditional position. Moreover, if the Monad or Limit is to act as a representative of the One in order to preserve the latter's transcendence, it had better be separated even if it may be said to perform its unifying functions. However, it is true that whenever Limit and the Unlimited are explicitly discussed, matter is said to be a manifestation of the Unlimited, whereas elsewhere only the One is said to extend its influence as far downward as Matter. According to the doctrine that the causal efficacy of the cause extends further down the scale than its effect, the One acts beyond Intelligence and causes even privation (*ET* prop. 57, with Dodds 230-231) and matter (see Dodds 232 *ad ET* prop. 58; *TP* III.6 26.2-11; *in Tim.* I 386.25-387.4,

role. In 27 b 7-c 1 Plato summarizes that one should distinguish four causes: Unlimitedness, Limit, Being (the result of the mixture of both) and the Cause of their being mixed. Since Being is here regarded as a *mixture* of Limit and Unlimited, and since 16 c 9-10 speaks of the principles being 'grown together' (σύμφυτον)[94] it is understandable that the later tradition translated the *Philebus* into the Aristotelian terms of matter and form, as in Proclus' survey above where matter finds its complement in immanent forms.[95] After all, Plato already associates Unlimitedness with the more-and-less;[96] Aristotle treats more-and-less as one of the designations of matter or the indefinite dyad in Plato's unwritten doctrines.[97] Many centuries later we find Syrianus explaining the role of the monad and the indefinite dyad with relation to number in terms of matter and form, and he also finds occasion to speak of the pre-cosmic chaos in the *Timaeus* in terms of indeterminate matter (ἀόριστος).[98] Whatever the correct interpretation

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387.23-30, 388.15, 437.2-24; cf. already Syrian. *in Metaph.* 59.17.). Since Proclus does not seem to waver whenever he expresses his considered opinion we should perhaps prefer the conclusion that the distinction between the One and Limit/Unlimited is only made when the context requires it. The positioning of Limit/Unlimited in relation to Proclus' henads seems an unsolved problem. It is to be noted that the account of Limit/Unlimited in *ET* prop. 89-92 *precedes* the exposition of the henads, whereas in *TP* III.7-9 it *follows* it. Sheppard *o.c.* 12 plausibly suggests that though both kinds of principle served to explain the transition from the One to Being, and the Henads became of prime importance in Proclus, the continuing exegesis of Platonic texts (notably the *Philebus*) guaranteed the presence of Limit/Unlimited.

[94] I tend to agree with Huby (1972) 333 and Gosling (1975) 84 against Striker (1970) that 16 c 9-10 is not necessarily confined to Forms, cf. also Kolb (1983) 507 and n. 10. I agree with Kolb *o.c.* 509 that the range of applications of the Unlimited in the *Philebus* is 'not so different from Aristotle's flexibility with "matter" and "potentiality"'. Cf. De Vogel (1959) 22-23 who notes the difference between immanent limit/unlimited in the *Philebus* and the self-subsisting receptacle in the *Timaeus*. However, the result of this debate does not affect my conclusion: the tradition is clear in its conflation of Plato and Aristotle.

[95] The connection between Limit/Unlimited and Form/Matter is the topic of Procl. *TP* III.10.

[96] *Phil.* 24 b 7-25 a 2.—It should also be noted that Unlimitedness is regarded as the source of all δύναμις (*ET* prop. 92, 95, 152), a term which in Proclus ranges from active and generative power in the intelligible realm to passive receptive potentiality in the sensible realm. The latter clearly incorporates Aristotle's notion of potentiality, which is linked to the principle of Unlimitedness in this way.

[97] See Theiler (1964) *passim;* cf. Gaiser (1963) Anhang, Test. 49-55.

[98] Syrian. *in Metaph.* 132.7-133.4 and 133.25 respectively. Note that this interpretation of the *Timaeus* seems to be identical with the view of Plutarch and Atticus, which was attacked by Proclus in his comments on 30 a 3-6, see p. 14 above.

of the *Philebus*, it is evident how the tradition combined Plato and Aristotle on this important issue.[99]

1.1 Syrianus' defence of Pythagoreanism

We should not forget that Proclus attributes the entire solution of the question concerning the unlimitedness of the One, including the lists of manifestations of Limit and Unlimitedness, to his master Syrianus (1118.35-6). If we try to verify this attribution, we find in Syrianus' commentary on Aristotle's *Metaphysics* (112.14-113.36) a discussion of the position of Limit and Unlimitedness, in response to Aristotle's objection that the theory of Forms is self-contradictory (XIII.4 1079 a 14-19).[100] Syrianus explains that according to Aristotle the first dyad would not be a principle after all because it is posterior to number, and (because the dyad is twice the monad) number is posterior to relation (πρός τι); relation, then, would turn out to be prior to independent existence (καθ' αὑτό) which contradicts Platonic doctrine. Syrianus replies with a careful distinction of the *forms* Monad and Dyad—which cause oneness and twoness in number throughout the universe—from the *principles* Monad and Dyad—which, being prior to Intellect

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[99] Merlan (1965) has drawn attention to the fact that Aristotle describes Plato's doctrine as a dualistic system, thus linking him to one of the schools of Pythagoreanism (one monistic, the other dualistic) which Aristotle distinguishes (*Metaph.* I.6 986 a 22ff.): the dualists take the list of ten συστοιχίαι as ultimate principles, whereas the monists reduce πέρας-ἄπειρον to the One. On Merlan's reading of *Metaph.* I.6 987 a 15-16 (keeping καὶ τὸ ἕν which is excised by Jaeger in his OCT edition) already Aristotle shows this tendency. Monistic interpretations of Plato are found in e.g. Simpl. *in Phys.* 247.30-248.15 and 256.32-257.4 (Hermodorus); Alex. *in Metaph.* 58.31-59.8, Simpl. *in Phys.* 181.22ff. (Eudorus). See Dodds (1928) 135-136.—Merlan's regret (*o.c.* 152) that we cannot know whether we are dealing only with a scholastic discussion issuing from the study of Aristotle's texts on Platonism or with a more fundamental discussion seems premature. The very same issue was debated on the occasion of Plato's texts, and the doctrine of the transcendence of the One surely surpasses scholastic activity. It is one of the theses of this study that commentaries, Platonic and Aristotelian alike, first and foremost *reflect* philosophical debate and hardly ever *exhaust* it.

[100] On monad and dyad in Syrianus see esp. Sheppard (1982). She suggests that Proclus preferred Limit/Unlimited over Monad/Dyad because (a) the two principles are a dyad themselves, which could be contrasted as such with the One—this would explain the difficulty of the relation of Limit/Unlimited to the One in Proclus' works; (b) for Proclus the dyad is the principle of infinity (ἀπειρία) which made the term ἄπειρον more appropriate than δυάς. Cf. Syrian. *in Metaph.* 112.14-113.36 (refuting Aristotle); 129.4-7, 131.34ff.; 160.18-19; 383.24ff.; 165.33-166.8 (containing references to the relevant Platonic texts).

and posterior to the One, together establish all being.[101] However, in this context he does not mention unqualified body.

He does mention unqualified body in his comments on an already familiar text,[102] *Metaph.* III.5, concerning the Pythagorean claim that the limits of body are ontologically prior to body.[103] His commentary runs:

T13 If someone denied that [the limits of body] are substances, [Aristotle] says, we would not know what substance is. For neither is 'whiteness' nor 'whitening' substance, but the former is an affection (πάθος) of substance, the latter a movement. Nor is 'being to the right' or a so-called relation (πρός τι) substance; nor health nor the accounts of them, but one is a disposition of substance, the others are signifying sounds (φωναὶ σημαντικαί). Therefore all these are in a substrate and none of them exists on its own (καθ' αὑτό). Water, fire, air, and earth are not substances in virtue of their qualities, but they may have something substantial in virtue of the unqualified body, which, as we say, remains <in> a variety of changes. However, a surface seems to *be* to a higher degree even than that [unqualified body], and line [to a higher extent] than a surface, a point than a line, and a monad than a point. (Syrian. *in Metaph.* III.5 1001 b 28-29, 49.8-17)

First, it is important to note that the wording of *Metaph.* III.5 1001 b 28-29 apparently gave rise to the interpretation that the three dimensions serve as substrate for the elementary qualities. This is understandable as a sequel to the Presocratics, who ended their search for basic entities precisely with one or more corporeal elements. Any progress was likely to start from that level, as Syrianus explicitly shows. Also in Asclepius' commentary on the *Metaphysics*, taken from Ammonius' courses, the text is glossed in familiar terms:

T14 "Only the body," i.e. the three-dimensional which receives them [*sc.* hotness, coldness, dryness, wetness, and other such affections], "remains as a being and substance," because, [Aristotle] says,[104] it exists on its own. (Ascl. *in Metaph.* 210.25-27)

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[101] Cf. also Syrian. *in Metaph.* 144.19-145.2.

[102] See p. 63f.

[103] For a general assessment of the reception of the 14th aporia in the ancient commentators, see De Haas (forthcoming [2]).

[104] Note the precaution as to independent existence of three-dimensional extension, in which Aristotle's criticism that follows already casts its shadow ahead. The quotations in Asclepius' text refer to Arist. *Metaph.* III.5 1002 a 2-4.

Similar statements can be found elsewhere in the commentary tradition.[105] Therefore, this passage in *Metaph.* III.5 should now definitely be added to the list of texts that provide the commentators with an occasion for discussing unqualified body and the three dimensions.

Apparently, the expression 'unqualified body' paraphrases the term 'body' in Aristotle which, we saw,[106] may refer to either physical body or mathematical body. But Alexander had come to use the expression 'mathematical body' to denote a concept in the mind rather than the immanent structural principle the Pythagoreans envisaged. I would venture the conjecture that for this reason the Neopythagoreans felt they were in need of a new term to designate their notion of body as an immanent principle characterized by the three dimensions only. At least it is clear from T13-14 that they use the term 'unqualified body' and 'the three-dimensional' for this purpose. As far as I know the phrase 'unqualified body' does not occur in Alexander, who reserves the adjective 'unqualified' for prime matter in similar contexts.[107] Hence, the phrase 'unqualified body' has the advantage that it clearly distinguishes physical, sensible body from the Pythagorean notion of body, while at the same time keeping clear from the undesirable associations of 'mathematical body'. This interpretation is confirmed by Simplicius who, in a passage with a definite Pythagorean flavour,[108] distinguishes unqualified body from mathematical body in pointing out

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[105] E.g. Ps.-Alex. *in Metaph.* 731.12-18, 733.23-28: quality makes the difference between σῶμα ἁπλῶς and φυσικὸν σῶμα, because (732.2-8) body as such is complete in terms of dimensions (cf. *Cael.* I.1) but not in terms of affections. The logical priority of mathematical over physical body is clear from the fact that the definition of physical body implies the three dimensions which constitute the definition of mathematical body (732.19-26). Especially relevant is *in Metaph.* 725.11-26 (*ad Metaph.* XIII.2 1076 a 38), where (a) three-dimensionality is called the characteristic of mathematical body, (b) physical body is also said to be three-dimensional, (c) reference is made to *Metaph.* III.5, and (d) it is denied that two occurrences of σῶμα imply that they refer to the same thing.

[106] See p. 66.

[107] Cf. Alex. *DA* 17.17; 18.2, 4; *Mant.* 104.19-20; 113.33-34; 124.7-8; *Quæst.* I.15 27.1-4, 22; II.3 49.30; II.7 52.20-53.30; II.15 60.26-27. Cf. Ps.-Alex. *in Metaph.* 497.1, 717.34. As a proper Aristotelian, Alexander has no particular interest in the dimensions, and the elements are explained in terms of prime matter and qualities without an intermediate level.—Interestingly, Philoponus' reports on Alexander's views of *GC* I.5 show that Alexander used 'mathematical body' where Philoponus substitutes 'the three-dimensional', see Chapter 3, p. 141 n. 24.

[108] Simpl. *in Cael.* III.1 299 a 2-11, 564.24-566.16.

that the former is enmattered (ἔνυλον) and tangible inasmuch as it is a volume (ὄγκος), i.e. not in terms of hotness and coldness.[109]

We have already seen that the phrase 'unqualified body' (ἄποιον σῶμα) has its origin in Stoic thought.[110] The Stoics regarded 'unqualified body' as the ultimate matter, the substrate and even substance of the universe, which is corporeal. It seems unlikely that the influence of Stoic thought goes much further, both in view of the general rejection of Stoic materialism by the Neoplatonists, and more particularly because the Stoics did not analyse physical substance beyond the level of corporeality. According to most Stoics, mathematical objects and limits in particular were believed to have existence in thought only (καθ' ἐπίνοιαν ψιλήν), as Proclus tells us.[111] Besides, the literal meaning of 'unqualified body' nicely converges with the Academic subtraction series, where the three dimensions are mentioned *after* the subtraction of all qualities. The transition from sensible body to this kind of body now becomes transparent: sensible body possesses qualities, unqualified body does not. Of course unqualified body is not supposed to exist separately, but it is certainly an aspect of sensible body. After all, no one will doubt that sensible bodies are three-dimensional.

Syrianus continues his commentary on Aristotle with an elaborate description of the two principles that Aristotle believed to be responsible for the Pythagorean view: (1) that which limits is more of a substance than that which is limited (49.17-18), and (2) that which takes something away along with itself is prior in substance to that which is taken away along with something else (49.18-19). The two principles are then applied to the series of body,[112] surface, line, point, and monad (49.19-25). Then Syrianus attacks these principles:

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[109] Incidentally, this is the only text I know of which mentions the possibility that three-dimensional extension can be perceived by one of the senses. Cf. Arist. *Top.* VI.4 141 b 10-14: 'a solid falls under perception most of all (μάλιστα)'. Since Aristotle's explanation of this statement is in terms of knowledge rather than perception, the text implies that even a solid does not fall under perception directly.

[110] See Chapter 2, p. 39ff.

[111] Procl. *in Eucl.* 89.15. Caston (1993) has traced the impact of Stoic theoretical distinctions on the concept of intentionality in the ancient commentators; he also lists Philop. *Contra Proclum* 414.6-7 (see T46), 433.26 (*o.c.* 239 n. 84); for the distinction between κατ' ἐπίνοιαν ψιλήν and κατ' ἐπίνοιαν see e.g. David, *in Isag.* 119.17-24, cf. Elias *in Isag.* 49.17-21. Cf. Long & Sedley 50 D-E with p. 301. I am grateful to Dr Caston for sending me a draft of his paper before publication. See also Taormina (1994) *passim.*

[112] At 49.20 Syrianus uses the mathematical term στερεά.

T15 1. This being established thus, we assert that neither of these arguments has the strength of truth. For (*ad* 1) that which limits *is* not always to a higher degree than that which is limited, but [this is the case] when a limit is brought to it which transcends its own nature, as art and nature [are brought] to artefacts and physical bodies. [This is] not at all [the case] when it contributes itself to the completion of the things that are determined (τὴν τῶν ὁριζομένων ἀποπεράτωσιν).
2. Nor (*ad* 2) is that which takes away but is not taken away along with something else, more of a substance than that which is disposed in the opposite way. For in that case stones would *be* to a higher degree than the house, and wood than the ship and in general the materials than the fully formed [products] (τῶν εἰδοπεποιημένων). However, [something can be said to *be* to a higher degree] when that which takes away is not a part of what is taken away along with it, nor an element nor a limit nor generally one of the things that contribute themselves to its constitution (σύστασιν).
3. The true genera are prior to the species and the substance to the accidents, and the surface is prior to the body in the sense that it is less material (ἀϋλοτέρα),[113] though it is not prior in the sense of being more of a substance. It is clear that the arguments are concerned with surface as immanent in bodies. (Syrian. *in Metaph.* III.5 1001 b 28-29, 49.25-37)

Thus Syrianus only accepts the principles as valid if priority is understood in Neoplatonic terms, i.e. as belonging to a higher level of reality. In this way he can preserve the Pythagorean/Platonic reduction of body to surface, line, point and monad as the description of ever higher levels of reality which all have ontological priority over the sensible body. In this respect he opposes Aristotle. On the other hand he recognizes that Aristotle's arguments regard surface etc. as immanent in bodies. This much Syrianus can accept, for the Neoplatonic system provides for manifestations of higher causes on several lower levels at the same time, as the chains of Limit and Unlimited illustrate.[114] Aristotle's mistake was to confuse the analysis of the sensible level in terms of logical priority with the proper analysis of the sensible level as to its causes which of course have ontological priority. This move renders Aristotle's critique entirely harmless, and enables Syrianus to

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[113] I.e. further away from the level of matter. Cf. Alex. *in Meteor.* 224.14-15 and T16 below.

[114] Compare Syrian. *in Metaph.* 179.5-10. In reaction to the Stoic view that limits exists only κατ' ἐπίνοιαν ψιλήν, and in reaction to the Peripatetic view that they are abstractions, Proclus *in Eucl.* 89.15-91.24 launches into a beautiful description of the cohesive and structuring role of limits in the physical universe.

endorse Pythagorean/Platonic doctrine alongside Aristotle's. Aristotle accused the Pythagoreans and Platonists of confusion of ontological priority and logical priority; Syrianus turns the tables on Aristotle and accuses him of the same confusion.

What is more important, Syrianus' defence of the ontological status of limits provides us with a motive why Aristotle's criticism continued to arouse so much interest. Apparently, the Neopythagorean revival, of which Syrianus and his pupil Proclus are exponents,[115] valued the Pythagorean/Platonic reduction of body to monad too highly to leave Aristotle's critical attitude unrebutted. Hence Aristotle's criticisms provide the occasion for elaborations of the status of limits and dimensions; and hence three-dimensionality was at the focus of interest at the time, which no doubt greatly fostered its attaining an independent position in the ontological hierarchy of the later Neoplatonists.

There is indeed proof that Syrianus was also familiar with the view that unqualified body is one level up from matter, since he attributes it to the Pythagoreans:

T16 In order that we understand Pythagorean thought also on the basis of what [Aristotle] asserts, we must say that [the Pythagoreans] call the composite which is constituted (διακοσμηθέν) out of matter and form 'a unity' (1091 a 15). The constitution (σύστασις) of this unity, they say, takes place as follows:[116] when the λόγος which proceeds from nature generates colour and form and, generally speaking, the cause, first the unqualified body comes to be—for this is 'what is closest to the unlimited' (1091 a 17). Next. when the limit or physical λόγος takes hold of the substratum completely (ὅταν κατασχῇ τέλεον τὸ ὑποκείμενον) the (fully) ordered thing (τὸ διακοσμηθέν). (Syrian. *in Metaph.* 181.10-16)

So not only in terms of analysis but also in terms of generation, unqualified body enters the scene on the level above matter. To conclude this section on Syrianus, we can say that Proclus' reference to his master led us again to the discussion of the ontological priority of limits, to which *Metaph.* VII.3 referred us earlier. We have identified a set of problems from which unqualified body or the three-dimensional emerged as part of the solution.

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[115] See O'Meara (1989).

[116] Cf. Philoponus' thought experiment in *in Phys.* 138.25-27 (see T47), where it is suggested that God would first create the substrate if he did not create form and matter together.

1.2 Aristotle's account of infinity

Now that we have been able to verify Proclus' statement about his master, we may return to Proclus' execution of the task put before him: the study of the chains of Limit and Unlimited. For Proclus provides some indications of another reason why unqualified body merits a separate entry in the manifestations of Limit and Unlimited, which is different from (though connected with) the discussion about limits.

When we start with the column of the Unlimited, we see that the only reason unqualified body is mentioned there is because of its infinite divisibility. In the column of Limit it is pointed out that unqualified body as a whole is equal in size to the universe, which is not infinite in that sense. Both statements can be paralleled from other works of Proclus and are indeed common knowledge.[117]

Both statements are clearly reminiscent of Aristotle's discussion of infinity in *Phys.* III.4-8[118]—indeed one might expect that if an analysis of τὸ ἄπειρον were to be made, Aristotle's influential discussion of the topic would not be neglected. According to Aristotle the infinite divisibility of physical and mathematical magnitudes is one of the five *prima facie* reasons to believe in the existence of τὸ ἄπειρον (203 b 15-18). The conceivability of the infinite divisibility of magnitudes as well as the infinite progression of the number series, are marked by Aristotle as the most important (though equally problematic) arguments for the existence of the infinite (203 b 22-25).

After some preliminary aporiai, Aristotle distances himself from mathematics and the intelligible realm and confines his discussion of the infinite to the question whether there is an infinite body in terms of growth (ἄπειρον ἐπὶ τὴν αὔξησιν)—for only this question is at home in the study of sensibles his *Physics* purports to be (204 b 1-4). Formally speaking, the answer seems easy: if body is defined as 'that which is bounded (ὡρισμένον) by surface', then body cannot be infi-

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[117] *EPh* II.15 (the entire *Elementatio physica* turns on magnitude, motion, and time being finite in size as well as potency); *ET* prop. 80, 74.31-32 Dodds (with J. Barnes [1983]), where the phrase σῶμα καθ' αὑτό is used, which also occurs in Philoponus. Note the implication of definite size in *Tim.* 30 a 3 πᾶν ὅσον ἦν ὁρατόν. For division see Procl. *in Tim.* II 136.31-32 where bodies are called μεριστά, which is the Platonic term for the same notion; *in Parm.* 970.25 ὑλικὸν μερισμόν; *in Eucl.* 86.16-19.

[118] Hussey (1983) xviii-xxvi provides a convenient survey of Aristotle's argument; Lear (1979-80) has an authoritative discussion of the topic, to which I am much indebted.

nite (204 b 4-7).[119] But as usual the formal argument quickly fades into the background: physical arguments are more appropriate in a physical inquiry.[120] Physically speaking, then, τὸ ἄπειρον founders because it is neither composite nor simple, and because the elements and their mutual generation would be annihilated if one of them were of infinite size (204 b 10-205 a 7). Aristotle posits that 'body is that which has extension in all directions, and that which is extended without limit is infinite, so that infinite body will be extended to infinity in all directions'.[121] The absurdity of this notion is argued for at length, and finally Aristotle concludes that there is no actually infinite body (206 a 7-8). A similar conclusion is reached in *Cael.* I.5-7 with regard to each of the elements and the heavens as a whole.[122] This important discussion in Aristotle, then, seems to be the authority that warrants the aspect of Limit in the cosmic body, and at the same time explains the emphasis on definite *size*.

The corresponding aspect of the Unlimited also derives from Aristotle's discussion of τὸ ἄπειρον. As is well-known, the denial of separate, actual infinity together with the problems that arise if the infinite were not to exist at all, lead to the characteristically Aristotelian *tertium quid* of an infinite that exists 'in a sense', i.e. 'potentially'. Both the infinite 'by division' (in the case of magnitudes and time) and the infinite 'by addition' (in the case of number and time) are potentially. For τὸ ἄπειρον is defined as 'that of which it is always possible to take some part outside when we take according to quantity' (transl. Hussey [1983]).[123] This property is said to have the sensible continuum

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[119] This is the definition of our concept of limitation which we related with three-dimensional extension at the beginning of this chapter. Note the importance this argument attained in Procl. *in Eucl.* 86.16-19 where the possibility of infinite three-dimensional extension, both in thought and in perception, is restrained by limiting planes.

[120] Cf. *GC* I.2 316 a 5-14. Note that the definition of body in terms of limits is relegated to the realm of formal, or logical, distinctions: this is the consequence of Aristotle's rejection of the *ontological* priority of the limits of body.

[121] *Phys.* III.5 204 b 20-22: Σῶμα μὲν γάρ ἐστιν τὸ πάντῃ ἔχον διάστασιν, ἄπειρον δὲ τὸ ἀπεράντως διεστηκός, ὥστε τὸ ἄπειρον σῶμα πανταχῇ ἔσται διεστηκὸς εἰς ἄπειρον. Cf. *Cael.* I.1 268 a 9-10.

[122] There the emphasis is slightly different for none of the arguments focuses on the extension of body, but rather on the movement of the heavens, natural place, weight, and motion.

[123] *Phys.* 207 a 7-8: ἄπειρον μὲν οὖν ἐστιν οὗ κατὰ τὸ ποσὸν λαμβάνουσιν αἰεί τι λαμβάνειν ἔστιν ἔξω.

as its primary substratum (207 b 35-208 a 2).[124] Hence, on the authority of Aristotle Proclus claims that τὸ ἄπειρον is manifested in the divisibility of magnitudes. Or, from the Neoplatonic perspective: though Aristotle may have criticized the Platonic/Pythagorean view of dimensions, he himself focuses on them in the context of infinite divisibility—and this opportunity to incorporate Aristotle is not to be missed.

Proclus also follows Aristotle's essay on τὸ ἄπειρον in associating the unlimited with potentiality. The Unlimited is the source of all δύναμις, generative in the intelligible realm, passive in the sensible realm.[125] Aristotle also points out that τὸ ἄπειρον is to be classified as a material cause and he describes the features in which it resembles matter.[126] For Proclus prime matter is the lowest manifestation of the Unlimited because it is formless (ἄμορφος, ἀνείδεος) and unbounded (ἀόριστος). A separate study would be required to make out the extent to which Aristotle's text was a source for these doctrines; from Proclus' perspective, however, it is certain that Aristotle's essay on τὸ ἄπειρον confirms much of what by his time had become traditional Neoplatonic doctrine.

Plotinus' explanation of the ἀπειρία of prime matter in *Enn.* II.4 [12] 15 may also have influenced Proclus. Plotinus identifies sensible matter as τὸ ἄπειρον, and he regards it as the image of τὸ ἄπειρον in the intelligible realm which serves as its model. Intelligible ἄπειρον is created from 'the unlimitedness, or potentiality, or everlastingness of the One' (*Enn.* II.4.[12] 15.19-20). By the time of Proclus Plotinus' theory of two matters (argued for in detail in *Enn.* II.4 [12] 1-5) had developed into an entire chain (σεῖρα) of ἄπειρα with Plotinus' two kinds of matter as its first and last members. Proclus' familiarity with this part of Plotinus' thought is apparent from his treatment of πέρας and ἄπειρον in the *Theologia Platonica*.[127] There Proclus explicitly notes that 'those around Plotinus' were right if, by way of analogy, they meant to compare form with the One and existence, and matter with δύναμις. However, according to Proclus they diverge from Pla-

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[124] Simplicius *in Phys.* 514.5-515.6, commenting on this passage, echoes some of Proclus' analysis of the manifestations of Unlimitedness; see further p. 122 n. 249.

[125] See Procl. *ET* prop. 92, 95, 152 with Dodds 246-248. Cf. n. 96 above.

[126] *Phys.* 207 b 34-35. Cf. Lear (1979-80) 201-202.

[127] Procl. *TP* III.9, 39.24-40.8 SW (see note 4 *ad loc.* p. 125) with reference to Plot. *Enn.* II.4 [12] 2-5, II.5 [25] 3.8-14.

tonic doctrine, if they meant to associate something entirely formless with intelligible substance.

It is noteworthy that as a manifestation of Limit the 'unqualified body as a whole' is not exclusively associated with the Pythagorean concept of body as the three-dimensional, but rather with the elements and the cosmos they constitute, i.e. sensible body. To be more precise, in the context of the Pythagorean/Platonic reduction of principles, the sensible body tends to move out of sight. Here, the sensible body as such continues to be the focus of interest. This difference may be the result of the respective contexts, and may be thought to derive ultimately from the discrepancy between the Platonic and Aristotelian approach to reality.

1.3 Unqualified body as substratum

Now that we have established the relevance of Aristotle's and Plotinus' account of τὸ ἄπειρον, there remains one further clue in Proclus' description of unqualified body. He says it is of the same extent as the universe 'for it must as a whole be said to be the substratum of the universe'. The expression 'substratum of the universe' (ὑποκείμενον τοῦ παντός) is not found in Aristotle but rather recalls Stoic thought. In spite of the Platonic aversion to Stoic materialism, it is true that there has always been a convergence between the two schools inasmuch as both parties accept one common substrate for the universe. For the Platonists this is the formless receptacle of the *Timaeus*, for the Stoics it is the corporeal substrate, one metaphysical aspect of their universe.[128] In later Platonic thought, as we saw, the level of the three-dimensional came to be regarded as the immediate substrate of the elementary qualities.[129] This substrate looks very much like the Stoic substrate, which might warrant the description of this level by a Stoic term—at least Simplicius and Philoponus consider that the doctrine derives from a Stoic origin.[130] It is likely that the proximate substrate of the four elements was only regarded as the substrate of the universe insofar as the universe consisted entirely of the four elements (according to the Platonic view), which would leave prime matter un-

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[128] The Aristotelian relativity of the notion of matter and substrate is reflected in the second Stoic genus, τὸ ἰδίως ποιόν, which is acknowledged in Porph. ap. Simpl. *in Cat.* 48.11-16 as one of the two senses of ὑποκείμενον.

[129] Cf. Syrianus T13, who suggests that the stability of unqualified body may account for substantiality.

[130] Simpl. *in Phys.* 227.25; Philop. *Contra Proclum* XI.1 410.1-3.

threatened. However that may be, Philoponus is not the first Neoplatonist to have called the level of the three-dimensional the 'substrate of the universe'. Simplicius mentions Pericles the Lydian as one of the 'modern' defenders of unqualified body as substrate.[131] If this Pericles is indeed the Neoplatonic colleague of Proclus who is mentioned in Marinus' *Vita Procli*, we might even conjecture that Pericles anticipated Philoponus' abolition of prime matter; if he did, we now see that he went only one step further than Proclus. Perhaps Syrianus' remark that the substantiality of the elements may derive from the stability of unqualified body (T13) points in the same direction.

Finally we may apply our terminology of extension to Proclus and compare the result with the Aristotelian texts discussed above. The level of unqualified body is characterized by three-dimensionality and determinate size. These two aspects together suggest an association of this level with extension rather than with extensionality.[132] The level of matter, however, has to be devoid of both extension and extensionality in order to be entirely formless and undetermined in itself after Platonic fashion. If we may venture a guess as to Proclus' interpretation of Aristotle's subtraction series, we might infer that for Proclus subtraction of the dimensions (between levels 9 and 10) would entail subtraction of both dimensions and definite size. The differentiation, however, between the definite size of particulars and the definite size of the universe introduces a sophistication which is absent from Aristotle's subtraction series. Needless to say, the chains are not to be regarded as a subtraction series, which is clear from the fact that immanent form occurs as the counterpart of matter, 'below' quantity and quality, both of which are forms for Proclus.[133]

Proclus' chains of Limit and Unlimited constitute only one point of view from which the Neoplatonic ontological hierarchy may be described. Proclus' commentary on *Parm.* 128 e 6-129 a 2 contains a similar survey concerning the two principles of Likeness and Unlikeness (ὁμοιότης and ἀνομοιότης), and there too 'the unqualified sub-

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[131] See Simpl. *in Phys.* 227.25. For Pericles see Chapter 1 p. 41 n. 140.

[132] Note that unqualified body differs from the eighth level not by lacking determinate size, but by the transition from determinate size in particular cases (τὸ ποσὸν πᾶν ἰδίως) to determinate size of body as a whole (ὡς ὅλον). The vocabulary is reminiscent of the Stoic distinction between κοινῶς ποιόν and ἰδίως ποιόν, see e.g. SVF II 378, 398 (= Long&Sedley 28 GH); cf. Reesor (1972). Perhaps this distinction inspired Proclus to divide the notion of τὸ ποσόν likewise.

[133] See especially T17 below.

strate of bodies' is discussed.[134] Likeness and Unlikeness are manifest at all levels of demiurgic activity, creating likenesses which imply at the same time the unlikeness that is characteristic of being an image (732.25-734.20). Likeness belongs to the chain of Limit, and Unlikeness to the chain of the Unlimited; as such they rank below these eminent principles in the realm of Being. Since, however, not all beings participate in Likeness and Unlikeness, they do not belong to the most generic principles of Being of which Sameness (ταὐτότης) and Otherness (ἑτερότης) are examples.[135] Nor do they belong to the most specific principles of Being the *infima species* partake of, which puts them in an intermediate position (734.20-735.29). Explaining the extent to which Likeness and Unlikeness pervade Being, Proclus writes:

T17 For if you consider in itself that unqualified substratum of bodies which is between matter and the numerous proximate forms, you will find that it also has Being and Form and Otherness and Sameness. How could it be, without Being? How could it have three dimensions, without division?[136] And how could it hold together without Sameness? But Likeness and Unlikeness are not in it, for it is without qualities; these [i.e. Likeness and Unlikeness] are found in things already qualified.[137] It is true that it has Motion and Rest—Motion, because it is in constant change, and Rest since it never goes outside its appropriate receptacle—but it has no differentiating qualities and powers. (Procl. *in Parm.* 735.33-736.8; transl. Morrow/Dillon, slightly modified)

The application of the five highest genera of Plato's *Sophist* (Being, Sameness, Otherness, Motion, and Rest) to unqualified body affirms that it belongs to the realm of Being. Moreover, its having three dimensions counts as a form. We learn that the influence of Likeness and Unlikeness does not extend as far down the hierarchy so as to reach unqualified body, because they are connected with qualities.[138] It seems, then, that unqualified body is here thought to be the substrate of

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[134] *In Parm.* 732.25-742.15, esp. 735.33-736.9.

[135] For the connection of matter and otherness cf. Plot. *Enn.* II.4 [12] 16.1-8.

[136] Morrow/Dillon (1987) 111 translate διαίρεσιν here by 'diversity' instead of 'division', but in view of the close connection between dimensions and division, the latter seems a better translation; the division of bodies is also a species of Otherness. Alternatively, one might think of the division that yields the three different dimensions.

[137] Reading πεποιωμένοις for πεποιημένοις (West), with Morrow/Dillon *o.c.* 111 n. 14.

[138] A distant echo of Arist. *Cat.* 11 a 15-19.

all qualities, and hence the substrate of (sensible) bodies, i.e. the elements.

Further on, however, Proclus discusses several types of contraries in answer to the question in what sense contrariety applies to Likeness and Unlikeness (739.15-742.15). He distinguishes material contraries, which are incompatible and mutually destructive, from immaterial contraries, which are pure and 'conspire'[139] together. In all there are four successive stages of contraries, in Intellect, in Soul, in the Heavens and in Matter. Whiteness and blackness in Matter flee from one another, Proclus claims (739.41-740.6). Does that necessarily mean he now regards Matter as the proximate substrate of these qualities? The answer is probably no, for two reasons: first, inasmuch as all sensible forms *ultimately* inhere in Matter (according to the perspective of the *Timaeus*),[140] all qualities do, so this way of speaking does not exclude unqualified body. Secondly, Proclus derives all contrariety from the contraries in Intellect, Sameness and Otherness (741.29-31), which, as we saw (T17), were manifested in unqualified body. Contrariety as such, then, can only have Matter as its substrate.[141]

2 *Proclus' Commentary on the* Timaeus

Not only in the *Parmenides* commentary but also in his *Timaeus* commentary Proclus indicates that unqualified body has a position of its own. In discussing *Tim.* 35 a 1-4 Proclus carefully positions the soul between the completely undivided (ἀμέριστον) and the divided

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[139] 'Conspire' is Morrow/Dillon's suggestive translation for συμπνέοντα.

[140] Note 740.2 ὑποδοχή.

[141] Interestingly, Proclus claims that in the Heavens contraries (e.g. contrary rotations) are able to coexist, which is ascribed to the peculiar nature of their substrate, aether. Aether is called immaterial (ἄυλος) because contraries behave differently in aether than in matter (740.6-18). In view of Philoponus' arguments against the eternity of the world and the existence of aether in particular (see Chapter 6, p. 285-286), it is of some importance to note that Proclus *l.c.* describes aether or the heavenly bodies as an extended entity (740.16-17: ἐν διαστατῷ πράγματι) in order to distinguish it from non-extended Soul as the substrate of a particular kind of contrariety.—Wildberg (1988) 97 points out that Aristotle's theory of aether is incongruous with the same author's reworking of Eudoxus' theory of homocentric circles, *Metaph.* XII.8, where he accepts ἀνελλίττουσαι σφαῖραι (1074 a 2-3), though avoiding the explicit language of contrariety. This might have been a source of inspiration for subsequent philosophers. The existence of contrary rotations in the heavens is one of the Philoponus' arguments against the immutability of aether, see *Contra Aristotelem* fr. 102-104 W., which is directed against Arist. *Cael.* 270 a 19-35; cf. Wildberg (1988) 230-231.

(μεριστόν).[142] The latter is repeatedly connected with body, the volume of body (ὄγκος τοῦ σώματος) and once[143] with unqualified corporeality (ἄποιος σωματότης) under whose influence the physical formative principles (φυσικοὶ λόγοι) are said to suffer division. From this we may gather that the physical λόγοι are (here) seen as inhering in bodies, rather than in prime matter.

In the discussion of Plato's *Timaeus*, it has been noted that at some stage the so-called Chaos serves as the material with which the Demiurge goes to work. Given the status of unqualified body, the question arises what hierarchical relation is supposed to hold between the Chaos and unqualified body. Does the corporeality of the Chaos imply the existence of unqualified body? Or do we have to envisage the Chaos prior to the emergence of the clearly defined character of three-dimensional body? I believe Proclus gave a clear answer to these questions, although up to now the relevant text has been interpreted differently.

In the previous chapter we have already summarized the discussion concerning the interpretation of *Timaeus* 30 a 3-6 as it is presented by Proclus in his commentary on that passage.[144] We saw how he identifies Chaos with the stage of the traces of the elements (*Tim.* 53 b 2), which, according to Proclus, testify to matter's suitability for receiving the order the Demiurge is about to create. Contrary to Porphyry, Proclus maintained that the material the Demiurge starts out with was not created by him at an earlier stage (as *Tim.* 52 d 3 shows). It is to be regarded as the proper effect of the Model, whose activity is (logically) prior to the Demiurge and extends beyond the proper effect of the Demiurge, viz. order, where it is responsible for the mere presence of forms and movement.[145] From the *Timaeus* commentary it is clear that the Demiurge is to be identified as the Activity of Intellect (see *Tim.* 29 a 6) and hence he is ranked in the lower realm of Intellect, preceded by the Being and Power of Intellect.[146] Probably the Model should be identified with the realm of Forms as a whole.

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[142] See *in Tim.* II 139.9-143.21.

[143] *In Tim.* II 139.17-24.

[144] See section III.2.

[145] Cf. *TP* V 61.15-62.3.

[146] See Procl. *TP* 268-318, where the activity of Intellect is identified with the Demiurge and Zeus, cf. Rosán (1949) 154-155; *in Tim.* I 386.13-387.5. In *Aet.* XIV 538-540 we find an elaborate argument by Proclus to the effect that the Demiurge is responsible for the creation of matter, whether he only rendered it suitable or cre-

However, when Proclus has finished his long survey of different interpretations, he announces the beginning of the textual commentary on *Tim.* 30 a 3-6:

T18 We must proceed to the textual commentary (λέξις) and consider how each thing is said. [The words] 'and so' (οὕτω δέ) connect the entire creation to the goodness of the Demiurge, or—what comes to the same—to his divinity.[147] [The words] 'everything visible' (πᾶν ὅσον ὁρατόν) first leave nothing devoid of God's providence, and then that 'visible' shows that it is corporeal. For it would not be visible if it were incorporeal and unqualified; so that it refers neither to matter nor to the second substrate, but it is that which already participates of the forms and "has some traces" (*Tim.* 53 b 2) and impressions of them and "moves in a discordant and disorderly way" (*Tim.* 30 a 4-5). The image-like undifferentiated presences (παρουσίαι) of the forms endow it with various movements, as Timaios himself will say further on (*Tim.* 40 a 6ff, 43 b 1-5). (Procl. *in Tim.* I 387.5-17)[148]

What is meant by 'the second substrate'? Festugière, in a note to his translation, claims that the elements are meant, since they constitute the first level above Matter; the designations 'incorporeal' and 'unqualified' traditionally refer to Matter.[149] Put in this way, however, Proclus' argument hardly makes sense, for at the most the negation of two attributes of matter would yield the conclusion (ὥστε) that the visible entity is not matter, not that it is *neither* matter *nor* something else. It seems to me that the negation of two attributes is meant to exclude two different levels in Proclus' universe: the negation of

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ated it directly.—On the history of the interpretation of the Demiurge up to Proclus, see Procl. *in Tim.* I 303.24-313.2, conveniently summarized by Festugière (1954) Appendice II.

[147] I.e. because οὕτω δή constitutes the transition from the previous lemma, which asserts that the Demiurge acts out of goodness.

[148] Proclus goes on to point out that the Demiurge can be said to create the entire universe (as was claimed by Porphyry and Iamblichus) only if it is acknowledged that he creates matter in virtue of the henad in himself, the chaos in virtue of the model in himself, and only order in virtue of its own characteristic demiurgic power. In this way the hierarchy of causes is maintained: higher causes act not only together with their effects (as Proclus illustrates in the case of the Demiurge), but also (at least logically) prior to their effects while their influence extends beyond them. Cf. *ET* prop. 56, 70 (with Dodds 238 n. 1). For the doctrine see *in Tim.* I 386.19-388.9, III 230.13-25 (containing a reference to *Tim.* 30 a 3-6). Elsewhere Proclus makes use of this interpretation of the *Timaeus*, e.g. *in Parm.* 845.8-846.21. The reverse occurs when the Demiurge leaves the cosmos as described in Plato *Polit.* 272 b ff.; cf. Procl. *in Tim.* I 389.10; *Aet.* XVIII 606.9-607.6.

[149] Festugière II 252 n. 1, followed by Baltes II 89-90 and 283 n. 268; I. Hadot (1978) 82 n. 20.

'incorporeal' excludes matter, the negation of 'unqualified' excludes unqualified body. If this is true,[150] the answer to our initial questions is ready at hand: in virtue of its visibility Proclus locates the Chaos between unqualified body and the elements, as the first as yet disorderly manifestation of the Model.[151]

Baltes[152] has emphasized that this interpretation of Proclus is meant to refute both Atticus, who thought Chaos was Matter, and Porphyry, who claimed that the elements were envisaged.[153] Probably, on this interpretation, we are to understand ἄποιον as a specific denial of the presence of the elementary qualities, in which case the two negations indeed disqualify both rival candidates. But the argument as it stands is useless against Porphyry, for Porphyry asserts that matter is both incorporeal and unqualified. He differs from Proclus in that he denies that the traces are corporeal and qualified, so we should expect Proclus to attack this different premise if he meant to refute Porphyry.[154] Be-

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[150] I can think of one objection: in the subsequent listing of causes (*in Tim.* I 387.17-30) no cause is mentioned to account for the level of unqualified body, which seems to show that it has no role to play here. One answer might be that the cause of unqualified body is not the issue here and would unnecessarily complicate an already intricate argument; elsewhere Proclus assigns Being, Sameness and Otherness to unqualified body as its causes, see T17, p. 93.

[151] 'Second substrate' in the required sense is called a Peripatetic phrase (Simpl. *in Cael.* 134.9-10 = start of Philop. *Contra Arist.* fr. 71 W.), and it has been traced to Alexander, ap. Simpl. *in Cael.* 599.5 by Wildberg (1988) 211 n. 85. Some caution is called for, though, since the phrase does not seem to occur in Alexander's extant writings, so it may be Simplician vocabulary. The origin of the phrase may also be confirmed *per viam negativam* insofar as the text under discussion seems to be the only passage where Proclus uses it.—Regardless of the interpretation of 'second substrate', the text entails the rejection of Porphyry's identification of 'the visible' with the elements, and of Atticus' identification of it with matter. Here it is interesting to note that Philoponus *in Phys.* 519.28-520.4, commenting on T10, identifies the chaos with indefinite extension, or 'envolumed matter', i.e. the equivalent of 'second substrate' in Proclus.

[152] Baltes II 83 n. 268, 89-90. Note that Plutarch also held that the Chaos is neither corporeal nor unqualified, *De an.procr.* 1014 b, 1016 d, *Is.Osir.* 374 e.

[153] Porphyry argued that the 'traces' are insufficient to account for visibility, because they are still incorporeal and formless; besides, the movement of Chaos is to be ascribed to nature (not the evil soul of Plutarch and Atticus) which presupposes the presence of the actual elements. Porphyry compares the traces or a shadow-drawing of Socrates which do not constitute the actual presence of any of Socrates' visible qualities either. See Porph. ap. Philop. *Contra Proclum* XIV.3 546.5-547.19; cf. *ibid.* VI.14 164.12-165.16; ap. Procl. *in Tim.* I 394.26-27.

[154] Baltes II 94 suggests that Proclus' report on Porphyry is biased because it obscures the latter's identification of πᾶν ὁρατόν with the elements by using vague descriptions like σωματικόν τι, σωματοειδές (*in Tim.* I 382.12-383.22), probably

sides, as far as I know the phrase 'second substratum' has never been used specifically for the elements. Festugière refers to Porphyry's distinction between two senses of substrate in Stoic terms, i.e. common and particular substrate (κοινῶς and ἰδίως), which Porphyry needed to solve a problem in the exegesis of Aristotle's *Categories*.[155] But since in that context the examples of second substrate are 'Socrates' and 'bronze', i.e. substances serving as the substrate for accidents, it will be clear that that meaning of 'second substrate' is entirely out of place in the context of the interpretation of the *Timaeus*.[156]

I would suggest that at the start of the λέξις Proclus leaves all polemics aside and concentrates on a careful interpretation of the passage in his own terms. In that framework it makes sense to position the level of Chaos in relation to matter, unqualified body and the elements.

The following table combines the results of our discussion of Proclus in an attempt to visualize several levels of his universe.[157] The brackets on the side show the influence of the various principles.

Diagram 1 Aspects of Proclus' universe

In Timaeum		*In Parmenidem*
Good		One
		Limit — Unlimited
Model		Being (Sameness, Otherness, Motion, Rest)
		Likeness — Unlikeness
Demiurge		
Order		Particular Quantity — Primary Qualities
Chaos (corporeal & qualified)		
Presence of Forms	2	Qualityless Body
Matter	1	Matter (incorporeal, formless)

in order to suggest more agreement with Porphyry. If so, it seems less likely that Proclus envisaged Porphyry as a target in the text under discussion.

[155] Porph. ap. Simpl. *in Cat.* 48.11-16; see further Chapter 4 p. 204.

[156] On the Aristotelian background see further p. 198ff.

[157] Since the level of primary qualities and particular quantity seems to entail more order than the Chaos can provide, I have ranked them slightly higher. The problematic relation between the One and Limit/Unlimited in their relation to matter has been discussed above, p. 80 n. 93.

After this survey of Proclean texts illustrating the role of three-dimensionality, the question remains to what extent Philoponus was familiar with them. Philoponus knew the *Timaeus* commentary, for he often quotes from it and he even preserved for us a fragment from the fifth book of Proclus' commentary, otherwise lost, in order to show that his own doctrine is confirmed by Proclus.[158] We would have expected him to refer especially to the *Parmenides* commentary, for instance to the phrase that unqualified body is 'the substrate of the universe'. But he does nothing of the kind, and I have not been able to find any reference to Proclus' commentary on the *Parmenides*. Nevertheless, Philoponus shows that he is well versed in the common doctrine of unqualified body, which he eventually carries to its logical conclusion—the rejection of incorporeal prime matter.

3 The commentaries on the Categories

Another confirmation of the presence of unqualified body as a separate level in conceptual analysis is found in the Neoplatonic commentaries on the *Categories*. Discussing the traditional question why Aristotle treats the category of quantity immediately after his chapter on substance, all commentators have an argument to the effect that three-dimensionality is closest to substance because it is conceived to belong to sensible substances prior to their receiving quality. Sometimes this fact is illustrated by means of the subtraction series familiar from Aristotle's *Metaph.* VII.3.[159]

The *Categories* of Aristotle was regarded as an introductory work, and it was treated early in the Neoplatonic course of philosophy. If the argument from the status of three-dimensionality can be inserted in a beginner's course in such a casual fashion, we are entitled to infer that the position of three-dimensionality was commonly accepted. We have seen that both Plato and Aristotle regard three-dimensionality as a basic feature of reality, and so does Plotinus.[160] Since the argument occurs in commentaries on the *Categories* from Porphyry to Simplicius and is never questioned, we have clear confirmation of the position of three-dimensionality in conceptual analysis down to Phi-

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[158] *Contra Proclum* IX.11 364.5-365.3 (= *in Tim.* V).

[159] Porph. *in Cat.* 100.12-16, 23-28, 111.2-4; Dex. *in Cat.* 65.15-66.13; Amm. *in Cat.* 54.4-12 (Cohen/Matthews [1991] p. 65 n. 81 need not doubt their suggestion); Philop. *in Cat.* 83.13-20; Simpl. *in Cat.* 120.33-121.3, 122.1-4.

[160] See below, T21 p. 128.

loponus. In Chapter 4 we shall see that Philoponus also exploits this analysis in explaining a theory about the categorial status of the differentia.[161]

4 *The reception of Plotinus' criticism of the Stoa*

In a context where unqualified body is considered as a substrate one is unavoidably reminded of Stoic physics, which is perhaps most aptly characterized by the term corporealism.[162] According to the Stoa all being is corporeal, including soul, qualities etc., whereas only place, time, void, and λεκτά are considered incorporeal. In our sources the passive factor in the Stoic universe is called (first) substrate,[163] (prime) matter,[164] (unqualified) substance.[165] It functions as the common substrate for the elementary qualities.[166] There is no need to point out that these descriptions derive from Platonic and Aristotelian thought and would (therefore) fit the Neoplatonic notion of prime matter. However, according to the Stoics the first substrate is corporeal.[167] Body is defined as being three-dimensional in some sources,[168] but more often resistance (ἀντιτυπία) is added as a means of distinguishing body from void and place which are three-dimensional too,[169] or to distinguish the mathematical solid from physical body.[170]

Stoic corporealism, though often attacked by Platonists and Aristotelians alike, did exert considerable influence, even when it gave rise to critical discussions of the notion of body and its significance. For instance, it has been argued[171] that Alexander, when criticizing the Stoic doctrine of soul, displays a tendency to contrast form and matter as inseparable incorporeals with body as the composite, without accounting for the fact that corporeality itself is a formal characteristic. This approach creates the difficulty that 'body is constituted out of incorporeals' which Alexander solves by invoking Aristotle's rule that every-

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[161] See p. 233.

[162] For a general introduction and the main texts see e.g. Hahm (1977) Ch. 1, Long&Sedley §§ 45-46.

[163] SVF II 314, 369-372, 374.

[164] SVF I 85, 87-88. For ἄποιος ὕλη cf. SVF II 313, 408, 1168.

[165] SVF I 85, 87-88, II 380, 762.

[166] SVF II 380, 405, 408, 449.

[167] Most clearly SVF II 320 (= Plot. II 4 [12] 1.13-14): ἄποιον σῶμα ἡ ὕλη.

[168] SVF II 357-358, III p. 259 n. 6 (Apollodorus).

[169] See SVF II 501-502. Of course void and place cannot be acted upon.

[170] See SVF II 114, 319 (critical passages from Plotinus), cf. II 381.

[171] Wurm (1973) 181-187.

thing comes into being out of its contrary. He also uses the categories to classify incorporeal being. The commentator only rejects the all-comprising Stoic category of 'something' (τι) because it implies the identification of all being with corporeal being, but he nevertheless accepts a genus over and above the corporeal and the incorporeal, viz. substance.[172]

Also in Neoplatonic circles Stoic materialism usually met with criticism. Plotinus in particular is famous for his fierce rejection of Stoic materialism, which he takes to task e.g. in his discussion of their categories (*Enn.* VI.1 [42] 25-30) and in his treatment of matter (*Enn.* II.4 [12]). In the context of this study it is interesting to find that his criticism lived on into the sixth century and was still taken seriously at that time. For Simplicius evokes Plotinus' criticisms of the Stoa in his treatment of *Phys.* I.7, and adds a few arguments of his own: What is more important, he formulates his own notion of prime matter as indefinite three-dimensional extension in such a way as to avoid contradiction with Plotinus and to maintain the latter's rejection of Stoicism.[173]

Philoponus has a different approach: he reaches a notion of prime matter which is almost the same as Simplicius', but he refers to the Stoa as his precedent and with (limited) approval. This makes us wonder what he would have thought of Plotinus' criticisms. Fortunately, for most of these criticisms the answer is ready at hand. We have already seen that the structure of Philoponus' excursus on matter is determined by several objections he himself raises against his reappraisal of prime matter as three-dimensional extension. It will become clear that he did not construct these objections himself: he found them in the tradition he inherited, for they are among the Plotinian arguments against the Stoa as rehearsed by Simplicius. This section therefore aims at establishing how Philoponus' debt to Stoic thought arose from traditional Neoplatonic criticism of the Stoa.

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[172] Wurm *o.c.* 187-191. However, the sources contradict each other concerning the distribution of being and non-being in the Stoic division, *ibid.* 176-177. Cf. Long&Sedley 162-166, Brunschwig (1988), Mansfeld (1992) 99-102.—Alexander's interpretation of the genus οὐσία is the starting point for the division of substance found in the commentators, discussed in Chapter 4, p. 235-236 with Diagram 3.

[173] Therefore I do not agree with Narbonne (1993) 251-254 who emphasizes the Stoic distortion of Aristotle's texts on matter which, he believes, had a decisive influence on the Neoplatonist interpretation of Aristotle; see further p. 121. Of course I do not wish to exclude the influence of Stoicism on other aspects of Neoplatonism, for which see esp. P. Hadot (1968), Narbonne (1994) 60-61.

It seems best to start from Simplicius' commentary on *Phys.* I.7 191 a 7-18, which can be divided into three parts. In the first part (*in Phys.* 225.22-227.22) Simplicius discusses the important phrase 'the underlying nature must be grasped by analogy' (Arist. *Phys.* 191 a 7-8). In the second part (*in Phys.* 227.23-230.19) Simplicius addresses the philosophers who claim that unqualified body is the primary substrate, of whom he mentions the Stoa and Pericles of Lydia, and refutes their arguments. Finally, in the third part (*in Phys.* 230.19-233.3) he begins to work his way towards showing a general agreement on the issue. Here he introduces his own view of prime matter and supports it by the famous reference to Moderatus, in order to trace back this point of view through Aristotle and Plato to Pythagoreans and even Egyptians.

4.1 Simplicius: the universal agreement concerning matter

On the occasion of Arist. *Phys.* 191 a 7-8 Simplicius raises the problem how an analogy can hold between e.g. bronze/statue and prime matter/substance, since the first pair is known by impact (κατ' ἐπέρεισιν), i.e. through quality and form, whereas matter must be entirely unqualified and formless and hence imperceptible.[174] He explains that Aristotle's analogy is equivalent to Plato's bastard reasoning (νόθος λογισμός)[175] and consists in a stripping procedure (ἀπογύμνωσις) rather than impact, as Plato's phrase 'by means of non-perception' (μετ' ἀναισθησίας) makes clear.[176] The same procedure leads to the One above the first form as well as to the substratum beyond the last forms, beyond perceptibility. Simplicius notes that these matters belong to first philosophy, and he supports Aristotle's choice for the term ἀναλογία by pointing out that this term preserves the perspective of physics, as is appropriate in the *Physics.* The difference in terminology

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[174] Simpl. *in Phys.* 225.30-226.9. Note how easily Simplicius interprets Aristotle's matter (which is *proximate* matter) in terms of *prime* matter.—Interestingly, Simplicius (226.17-25) notes the contrast between Aristotle, equating οὐσία with τόδε τι (191 a 11-12), and Plato *Tim.* 49 e 7-50 a 3, applying τόδε to matter. He explains that Aristotle uses the term to signify forms as primary beings and through them being in general (191 a 12 τὸ ὄν). Earlier, in 217.36-218.12, Simplicius managed to extort an agreement between Plato and Aristotle on this issue, exploiting Aristotle's use of τόδε τι (190 b 25-26) and χρυσός (190 b 16), though, in all honesty, he announced the contrast we find here.

[175] *Tim.* 52 b 2: μετ' ἀναισθησίας ἁπτὸν λογισμῷ τινι λόγῳ.

[176] This description fully agrees with Plotinus, *Enn.* II.4 [12] 10; cf. II.4 [12] 12.26-34.

ceases to be a problem as soon as it is realized that the Pythagorean Timaios used both terms together when describing the epistemology of matter.[177]

Here too Simplicius wants to show not only that Plato and Aristotle are in agreement, but also that they both derive their thoughts from the Pythagoreans, in this case Timaios Lokros. Earlier in his commentary on *Phys.* I.7 Simplicius argued for an agreement between Plato and Aristotle concerning the number of principles and the arguments in favour of the existence of the substrate as a principle. So far as the first issue is concerned,[178] he remarks that 191 a 5-7 is well received by Platonists. For Aristotle's statement there that 'in a sense the contraries need not be two, if presence and absence of only one contrary suffices to explain change', leaves us with the same principles, matter and form, that Plato had acknowledged.[179] Aristotle added a third, accidental principle, i.e. privation, whereas Plato confined himself to constitutive principles properly speaking. For the same reason Plato mentioned the demiurgic Intellect and the Model instead of Aristotle's Nature—which is only instrumental—and fate and spontaneity—which are only accidental.

As for the arguments for the introduction of a substrate,[180] according to Simplicius both philosophers argue from the need of contraries to have a common substrate, because contraries cannot affect each other and because they are not self-subsistent. Aristotle introduces privation only because in substances which are more complex than the elements it is not always easy to point out the contrary qualities whose change generates one substance out of another.[181] Again Plato adds the cause *par excellence* (κυριωτάτη αἰτία), the intelligible, archetypal, exemplary and self-subsistent form, which is different on all counts from the sensible form. The very contrast entails that the latter needs

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[177] See Simpl. *in Phys.* 227.18-22, including a quotation from Timaios Lokros, p. 206.8-9 Thesleff.

[178] See Simpl. *in Phys.* 222.29-223.26.

[179] Cf. Aristotle's description of Plato's principles in *Metaph.* I.6 988 a 7-15.

[180] See Simpl. *in Phys.* 223.27-225.20.

[181] A remarkable thought, since it implies that all generation could be reduced to qualitative change, a reduction which was strongly rejected by Aristotle. However, I assume Simplicius understands quality as a general characterization of the manifestation of a form in matter, as usual in Platonic thought. On this sense of quality, see below p. 186, under Q5.

something different as its substrate.[182] In short, the philosophers are in agreement—only Plato has the better, more comprehensive, approach. The passage is a neat confirmation of the position of the study of Aristotle in a Neoplatonic curriculum: Aristotle provides the preparation to the more fully elaborated doctrine of Plato.

4.2 Philoponus: Plotinus' criticism refuted

By way of introduction to the second part of his commentary on *Phys.* 191 a 7-18 Simplicius notes that there are people, and not just anybody, who claim that Plato and Aristotle believed unqualified body to be primary matter. By way of example Simplicius mentions the Stoa, among the ancients, and Pericles the Lydian, among the 'moderns'. However, it will hardly need pointing out that his description of the doctrine applies to Philoponus' new definition of matter as well, with the qualification that Philoponus does not ascribe this view to Plato and Aristotle. For he flatly states that his view is a different one. Simplicius provides five arguments used in support of unqualified body as prime matter; three of them are also found in Philoponus' excursus on matter in the *Contra Proclum*. The following table summarizes the arguments and provides the references.

Arguments in favour of unqualified body as prime matter	Simplicius *in Physica*	Philoponus *Contra Proclum*
i. Both Aristotle and Plato claim that hot, cold, moist, and dry are the qualities of the elements; their common substrate is body; hence body is prime matter.	227.26-30	XI.3 414.10-20;[183] XI.4 417.20-22, 419.7-9; XI.6 424.23-425.1, 12-24
ii. If body has a substrate, and generation occurs out of contraries which	227.30-33	—

[182] I.e. the opposite of self-subsistence is dependence on 'something else', i.e. the *tertium quid* which is substrate. The thought is illustrated by means of a long quotation of Plato's 'most beautiful' words, *Tim.* 51 e 6-52 d 1.

[183] Philoponus adds heavy and light as elementary qualities.—Note that the two premisses are also part of the traditional account as Philoponus presents it, though the conclusion is not; cf. *Contra Proclum* XI.1 409.3-8; Plot. *Enn.* III.6 [26] 8.8-9. The traditional arguments run parallel to this argument, even to the extent that they claim that the substrate is *different* from the physical forms it is able to receive (XI.2 411.26-412.2); contrary to Philoponus, however, they conclude from it that it is entirely ἀνείδεος (412.2-5). Cf. Alcin. *Didask.* VIII 19.29-20.10 Whittaker (= 162.19-163.10 Hermann).

have a common substrate, there must be something contrary to body. [*Quod non, ergo etc.*]		
iii. That which remains in each change we call matter; unqualified body remains, for there is nothing for body to perish into. [*Ergo etc.*]	227.33-228.1	XI.3 412.17-28, 413.12-414.5; XI.4 415.11-15, 417.28-419.16; XI.6 425.7-8
iv. From *Tim.* 52 d 4-6 and 53 b 1-4 it is clear that Plato believes that the proximate substrate of the elementary qualities, i.e. unqualified body, is matter. If the Demiurge first created the forms of the elements in matter, and their common substrate is unqualified body, this must be matter.[184]	228.1-10	—
v. It is also clear that Aristotle believes that unqualified body is the first substrate and matter. For if body entered and left matter like other forms, there would be times when privation, i.e. the incorporeal, inhered in matter. But Aristotle [*Cael.* I.1 268 a 1-6] clearly argues that τὰ φυσικά are bodies and related to bodies.	228.10-17	XI.3 *passim*

Apparently, Simplicius knew of arguments in favour of Stoic doctrine which are of a clearly Platonic-Peripatetic nature. It is striking that no Stoic argument for the corporeality of the universe is mentioned, e.g. that action and passion only apply to bodies.[185] Apparently, the proponents of this view accepted the importance of corporeality, but they derived their arguments from the Platonic-Peripatetic tradition. One wonders who first formulated these arguments, especially if we want to look beyond the virtually unknown Pericles of Lydia.[186] This interesting problem, however, cannot detain us here, since we must confine ourselves to the relevance of these arguments to our topic—Philoponus' discourse on matter.

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[184] This argument reads as an application of Arist. *GC* II.1 to Plato's *Timaeus*.
[185] See Chapter 1 p. 39 with n. 133.
[186] For Pericles see Chapter 1 p. 41 n. 140 and p. 104 above.

It is striking that both the first and fourth arguments turn on the assumption that the substrate of the elementary qualities is unqualified body. Simplicius too seems to allow for this view in so many words.[187] We have already seen how the three-dimensional had acquired a secure position between prime matter and the elements. The fourth argument is baffling at first: it entirely ignores Plato's careful account of matter as formless and unaffected by change. But we should admit that the discrepancy between the *Timaeus* section on matter and the subsequent description of the Demiurge's activity has always caused interpreters, ancient and modern, a great deal of trouble. If the latter account is emphasized to the detriment of the former, the fourth argument gains some credibility.

The other pillar of this set of arguments is the notion that body has no contrary; therefore body does not perish and, consequently, it does not need a substrate: it does not need traditional prime matter. We may surmise that according to these philosophers unqualified body is eternal. In this they would differ from Philoponus who believes in creation, and argues that matter too had a beginning. We are directed towards *Cael.* I.1 where Aristotle clearly states that physics deals with bodies as its point of departure.[188] Indeed, one might draw the conclusion that as far as physics is concerned, there is no need to account for the generation and corruption of body—though this would not withhold prime matter from reappearing in the context of metaphysics. It seems that the fifth argument is meant to block the most obvious objection to the second, viz. that the contrary of body is the incorporeal, its privation.

In Philoponus we find clear parallels to several of these arguments, as the table shows. They appear in the first exposition of his own view (XI.3), his half-way conclusions (XI.6) and dispersed throughout the rest of his essay on matter and beyond. We are not informed what Philoponus' thoughts about the *Timaeus*-passages were. Even where he mentions them in the *Contra Proclum*[189] he does not use them in

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[187] *In Phys.* 230.9-10, see below p. 110 argument no. 7.

[188] Arist. *Cael.* I.1 268 a 1-6: Ἡ περὶ φύσεως ἐπιστήμη σχεδὸν ἡ πλείστη φαίνεται περί τε σώματα καὶ μεγέθη καὶ τὰ τούτων οὖσα πάθη καὶ τὰς κινήσεις, ἔτι δὲ περὶ τὰς ἀρχάς, ὅσαι τῆς τοιαύτης οὐσίας εἰσίν· τῶν γὰρ φύσει συνεστώτων τὰ μέν ἐστι σώματα καὶ μεγέθη, τὰ δ' ἔχει σῶμα καὶ μέγεθος, τὰ δ' ἀρχαὶ τῶν ἐχόντων εἰσίν. In the sequel the term body is explained with reference to the three dimensions.

[189] *Tim.* 53 b is mentioned at XIV.1 542.2-5—where Philoponus is explaining Proclus' view of the co-temporality of prime matter, disorderly motion, and the

support of his own views. Rather, he dismisses all attempts to interpret the *Timaeus* as irrelevant for the question of the eternity of the world since they merely arise from the exegesis of that text.[190]

In response to the arguments, Simplicius first rejects the appeals to authority (iii-iv), which are not only easier to deal with than the more substantial arguments which follow, but also threaten his main concern of a proper understanding of Plato and Aristotle. According to Simplicius (228.17-28), Plato did not regard body as the first substrate, because he reduces body to triangles.[191] Hence Simplicius seems to follow a suggestion defended by Alexander (*Quæst.* II.13) that the triangles have a material rather than a formal role for Plato.[192] Plato also regarded body as three-dimensional, which is implied in 'having depth' (*Tim.* 53 c 6). Such a thing contains number and shape as part of its essence, in particular when body as a whole (the universe) is limited in magnitude, as both Plato and Aristotle believe. Matter does not possess either number or shape by itself, but changes its appearance through forms and numbers[193] which it receives by participating in forms.

Simplicius (228.28-229.5) does not believe that Aristotle regarded body as the first substrate, because the philosopher clearly says that 'the matter of body and of large and small is the same'.[194] Therefore, matter can neither be body nor large nor small, whereas limited body is of a particular quantity, and cannot be large and small in itself at the same time. Moreover, body is known by impact, which contradicts the

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forms of the elements (see above p. 6ff.)—and XVIII 606.10, as part of Proclus' argument.

[190] *Contra Proclum* XIV.1 541.7-15. For the discussion concerning the *Timaeus* see Chapter 1.

[191] Simplicius quotes *Tim.* 53 c 4-7, *in Phys.* 228.20-23. Cf. p. 54.—In his commentary on the *De Caelo* Simplicius defends Plato's theory of triangles against Aristotle's attacks, while quoting profusely from Proclus' treatise on this matter. It is noteworthy that Philoponus rejects Plato's theory of triangles in passing at *Contra Proclum* XI.7 428.11-14, see Chapter 5 p. 266-267.

[192] Cf. below p. 266.

[193] An oblique reference to *Tim.* 53 b 4-5, adduced by his opponents (iii above).

[194] This is an adaptation of *GC* I.5 320 b 22-24 (not noticed by Diels *app.crit. ad loc.* who adduces *Metaph.* I.6 988a and *Phys.* IV.2 209 b 35 neither of which are relevant). Note that by calling the matter of magnitude (μέγεθος) the 'matter of the large and small' it is associated with Platonic prime matter. On *GC* I.5 see further Chapter 3, p. 137ff.—Cf. Simplicius' objection to the simplicity of three-dimensional body in *Contra Aristotelem* fr. 86 W.: if it has large and small as differentiae, it has contraries and must therefore be composite after all.

epistemology of matter in Plato (a bastard reasoning) as well as Aristotle (analogy).[195] Hence, body is not prime matter.

Subsequently, and significantly, Simplicius goes beyond the need of the present argument and claims (229.5-10) that in *Phys.* IV.2 209 b 2-4 Aristotle wants the matter of magnitude to be a certain indeterminate (ἀόριστος) extension which is determined (ὁριζομένην) by formal magnitude (εἰδητικὸν μέγεθος). Aristotle introduces the matter of magnitude because magnitude is considered as a form. This interpretation of Aristotle, which in fact attributes to Aristotle the latter's treatment of Plato's thought,[196] already anticipates Simplicius' own view which he will introduce from 230.21 onwards. There he will claim Aristotle's support by means of a second reference to *Phys.* IV.2 (209 b 6-9).[197] The insertion of this argument here betrays the eagerness which explains the insertion of the entire digression on matter and for which Simplicius almost apologizes at the end: 'But I have somewhat elaborated on this because I am not content with the current opinion about matter' (233.2-3).

After refuting the appeals to authority, Simplicius turns to the more substantial arguments against the 'Stoic' view, which he explicitly draws from Plotinus' discussions of Stoic thought. As it appears, almost every argument has found its way into Philoponus' excursus on matter as a part of the objections he himself raises against his claim that the three-dimensional is prime matter. The following table lists the arguments in the order in which they are found in Simplicius, together with the appropriate references. The references confirm that Plotinus is the source for these arguments and that the arguments are relevant to Philoponus' account of matter.[198]

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[195] See section 4.1 above.

[196] See our interpretation of this passage above p. 57.

[197] Cf. Simpl. *in Phys.* 232.24-30. See section 4.3 below.

[198] References to Philoponus are in Roman for passages reflecting the 'Plotinian' argument, in *italics* for passages refuting (part of) such an argument, explicitly or implicitly. In the references to Plotinus I have not included the customary reference to the order of Plotinus' works for the sake of clarity. For Simplicius see Sorabji *MSM* Ch. 1 and Narbonne (1993) 251-255. Narbonne seems to be unaware of both Philoponus' *Contra Proclum* and Sorabji's work. For a brief discussion of *Enn.* II.4 [12] 8-12 in relation to *Enn.* III.6 [26] 16-18 see Narbonne *o.c.* 224-234.

Simplicius *in Physica:* Plotinus' arguments against the Stoa	Plotinus *Enneads*	Philoponus *Contra Proclum*
1. No form belongs to matter essentially, so neither do shape and magnitude; body possesses shape, magnitude, and number; hence, matter is not a body.[199] (229.12-19)	**II.4.8.2-13**; 9.5-6; 10.19-23, 27; 12.31-37; 13.23-24; II.6.2.8-15;[200] II.7.3; III.6.6.3-4; 12.16-21; 17.1-4; VI.1.26.28-34	*XI.4 419.16-421.11*[201]
2. Matter is not a composite of matter and form; body is a composite; hence, matter is not a body. (229.16-17, 19-21)	**II.4.8.13-14**; 9.5-6; cf. IV.7.2.24; III.1.2.15-17; III.6.7.4-5; 9.38; VI.1.26.12-17, 26-28	*XI.3 414.20-415.10*; XI.5 421.16-422.4; *XI.7 428.5-17*
3. If matter is body it has a size of its own; then both the Demiurge (who creates forms by will) and Nature (who creates in virtue of its own λόγοι) would have to obey the size of matter. [*Quod absurdum*] (229.21-24)	**II.4.8.17-23**	*XI.4 419.14-16*;[202] *XI.6 424.12-23; XI.8 430.20-433.3*
4. If matter has magnitude, it also has shape. This is absurd because shape is a form	**II.4.8.22, 10**; III.6.10.1-13; 18.37-40[204]	*XI.8 431.2-433.3*[205]

[199] The same argument is derived from Plato by Simplicius in *in Phys.* 228.17-28 (discussed above).

[200] This is a tantalizing passage in that it envisages subtracting from the elements all qualities, including resistance, only to leave τὸ τριχῇ διαστατόν; from this Plotinus seems to conclude that matter is substance. This is no doubt Plotinian shorthand for Aristotle's subtraction series in *Metaph.* VII.3, but he does not make a distinction between the three-dimensional and matter. Apparently, Plotinus took *Metaph.* VII.3 1029 a 17-19 to mean that what is left (matter) is itself determined by three dimensions. Plotinus rejects this suggestion: rather, form is substance (this agrees with *Metaph.* VII.3), because it is λόγος rather than quality (Plotinus again).

[201] Three-dimensional body is *not* identical with either large or small, so it does not possess magnitude and number in itself, only accidentally.

[202] Change of magnitude is intension and remission of the three dimensions only; this view is further elucidated in XI.8, see further Chapter 3.

and a quality; moreover matter would be unfit to receive *every* shape when it is already subdued by one definite shape.[203] (229.24-27)		
5. Every form that approaches matter brings along its own features, including magnitude. Neither magnitude nor quantity is proper to matter, so matter is not a body either. (229.27-30)	**II.4.8.23-30**; 14-17; 9.13-15; III.6.16.15-20	cf. XI.4 417.8-17;[206] *XI.8 430.18-431.2*
6. If matter is a body, it is a particular *quantum* and has assumed magnitude. However, quantity differs from a *quantum*, and magnitude from that which has assumed magnitude, as incorporeal, simple forms differ from the composites participating in them. If, then, matter is a body, it will be composite and not a principle any more. Or else we must say that these forms grant to matter magnitude and quality which were not there before. (229.31-230.3)	**II.4.9.6-15**; 8.11-13; 10.23-25; 12.7; cf. IV.7.1.17-18; III.6.12.53-57; 17-18	*XI.4 419.16-421.11*;[207] *XI.5 424.10-11; XI.8 430.18-431.2, 434.9-436.16*[208]

[203] Cf. *Tim.* 50 d 5-51 b 2.

[204] Matter must lack extension (διάστημα) before it can receive it.

[205] Matter *cannot* be suited for all forms whatsoever if the observed generation of things is to be explained.

[206] Growth and diminution without addition or subtraction is supposed to threaten the essential stability of three-dimensional body. No doubt Philoponus' opponents would explain this kind of growth and diminution by means of the generation of new forms, which entails the corruption of the earlier body.

[207] Three-dimensional body is not essentially identical with large and/or small. Hence it is not as such a particular *quantum*. Compare Plot. *Enn.* II.4 [12] 11.33-34 who denies the identification of matter with either large or small, but only to identify it with the Platonic 'large-and-small', see below T21 p. 128.

[208] Three-dimensional body as a whole is limited as to expansion and contraction (cf. Procl. *in Parm.* 1123.12-13, see above p. 78ff.).

7. Matter is all forms in potentiality or matter is receptive of that which is in potentiality, and therefore beyond potentiality. Matter is receptive of incorporeal forms. How can body be potentially incorporeal (i.e. non-corporeal)?[209] Perhaps one might say that matter does not receive the incorporeal form primarily, but by means of the body (*sic*). (230.3-10)	II.5.4.4;[210] III.6.7.5-7	*XI.8 429.2-433.3, 433.24-435.2;*[211] *XI.8 442.2-443.6; 443.6-444.25*[212]
8. Body consists of genus and differentiae, for it is a three-dimensional substance. Such a thing is a form, not	—	XI.5 421.16-422.4;[213] XI.6 425.1-6, 19-24; *XI.7 426.4-428.5*

[209] Simplicius carefully distinguishes between ἀ-σώματος in the sense of incorporeal (the contrary of corporeal and therefore potentially *sc.* corporeal) and non-corporeal (beyond that contrariety). Matter as the recipient of incorporeal forms should of course be non-corporeal. This reflects Platonic thought, as found in Alcin. *Didask.* VIII 20.6-7 Whittaker (= p. 163.6-7 Hermann); Apul. *De Platone* I.5, p. 87.11-15 Thomas; also Philop. *Contra Proclum* XI.3 413.8-12. For Peripatetic thought (matter is incorporeal), cf. e.g. Alex. *DA* 5.18-6.6.

[210] *Enn.* II.5 [25] 4.3-13 already anticipates Philoponus' objection that matter which is only potentially everything does not belong to τὰ ὄντα. Plotinus, however, qualifies this assertion by saying that matter *is not* inasmuch as it *is not* the realities which may inhere in it, and inasmuch as it *is not* an intelligible form. Nevertheless, matter is a *tertium quid* as 'an announcement of what it is going to be' (II.5 [25] 5.3-4). On any other interpretation, matter is only matter like bronze is, not merely matter (πάντη ὕλη) but also something in actuality (τι ἐνεργείᾳ) (II.5 [25] 5.7-8). Plotinus concludes his essay thus: 'One must say, then, it would seem, only that it exists potentially, in order that it may be what it is, or else one must refute these arguments'. Did Philoponus take up this challenge?

[211] There are certainly limits to corporeal extension, since it not only has a definite size in each substance but it also has a maximum (the size of the universe) and a minimum (the compression rate of earth).

[212] Cf. Alex. *DA* 121.21-33.

[213] The second objection (XI.5) argues, among other things, that body is a composite of matter and three-dimensionality as form. Nonetheless it is suggested that three-dimensionality is a quantity and hence cannot be matter. Philoponus replies that three-dimensionality is an essential quantity and differentia, and hence a self-subsistent substance. He does not deny that three-dimensionality is a form, and argues in XI.7 how this is compatible with being matter.

matter. (230.10-12)		
9. Body is contradistinguished from incorporeal qualities, whereas matter is related similarly to all. [*Ergo etc.*] (230.12-13)	II.4.13.26-32; III.6.9.37-44	—
10. Body is determined by three dimensions, whereas matter is completely undetermined. [*Ergo etc.*] (230.13-14)	VI.1.26.23-25;[214] cf. II.4.2.2, 11.40, 12.35-37; III.4.1.11-15; VI.1.26.20-22	XI.7 425.25-426.4; *426.4-427.5*

By way of conclusion Simplicius adds a further argument:

11. It is evident that the substrate of all forms cannot be form. If body is a form, the substrate is not body. (230.15-19)	II.4.12.35-38; 13.23-24[215]	*XI.7 426.4-428.5; XI.8 431.2-433.3; 444.27-445.7*

As they stand, these eleven arguments provide a convenient summary of Plotinus' thought on matter[216] and the relation of matter to quality and sensible substance.[217] The second column shows that most of Plotinus' arguments derive from a number of essays the relevance of which is at once clear: his treatises on matter (II.4 [12], esp. cc. 8-9), actuality and potentiality (II.5 [25]) and impassibility (III.6 [26]); on

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[214] Plotinus says: 'for matter is not contained in the definition of three-dimensionality, nor three-dimensionality in the definition of matter'. Philop. *Contra Proclum* XI.5 424.4-11 states that three-dimensionality is the differentia of body which, he believes, serves as matter; this comes close to a flat contradiction. However, it should be noted that for Philoponus being matter is to be sharply distinguished from the natural determination of that which serves as matter, see XI.7, discussed in Chapter 4 below.

[215] According to Plotinus that which serves as matter in the intelligible realm is form, Plot. *Enn.* II.5 [25] 3.13-14. Nevertheless, it may serve as matter in relation to something else (as the example of Soul illustrates).

[216] For general discussions of Plotinus' notion of matter, see Matter (1964) 200-217, Santa Cruz de Prunes (1979) 95-123, Narbonne (1993); for Plotinus' reception of Plato in this respect, see e.g. Schwyzer (1973) 266-272. For matter and its relation to evil see also Rist (1961), O'Brien (1971). The generation of matter has been the subject of a debate between Corrigan (1986, 1988), Narbonne (1987, 1994 Appendice), O'Brien (1988, 1991). Particularly relevant is Jevons (1964, 1965) who highlights Plotinus' 'dequantitation' of matter, space, and time.

[217] See Wurm (1973) *passim*, Strange (1987) 971-972.—Porph. *Sent.* 20-21 provides a useful summary of what is actually Plotinus' view of matter.

quality and substance (II.6 [17]); his criticism of the Stoic categories (VI.1 [42] 25-28), and of their concept of κρᾶσις (II.7 [37], esp. c. 3). In the context of this study it is not necessary to embark on the interpretation of these complex Plotinian treatises. In the following chapters I shall refer to details of Plotinus' discussions whenever appropriate. Here it suffices to conclude that the arguments have been selected from all relevant treatises, which betrays a fair knowledge of Plotinus' works. If Plotinus was sometimes read in Neoplatonic schools[218] this familiarity on the part of Simplicius or an earlier compiler need not be surprising. As the references in bold make clear, Simplicius even lists the arguments against the Stoics in the same order as Plotinus did.

From the third column it is evident that this set of arguments to a large extent determined the content of Philoponus' excursus on matter. Of course, Philoponus cannot have had Simplicius' *Physics* commentary at his disposal when he was writing the *Contra Proclum* in 529 AD, since Simplicius wrote it after 532 AD or perhaps even after 538 AD.[219] But Simplicius was a contemporary of Philoponus and his survey testifies to the fact that the arguments of Plotinus were still known as such and employed in the sixth century AD. Moreover Simplicius, like Philoponus, studied with Ammonius so they might have read Plotinus with the same teacher. Philoponus mentions Plotinus on several occasions throughout his work, also in the *Contra Proclum*.[220] But even if we assume he did not read Plotinus, it is conceivable that this or a similar set of arguments circulated as standard Neoplatonic criticism of Stoic materialism. At any rate, I take the agreement between these arguments and the structure of Philoponus' excursus on matter to be established.

In a way the table can be seen as a programme for Philoponus if he is to defend his view of matter. Simplicius' criticisms are aimed at 'those who believe that unqualified body is primary matter' (227.23-24), which is precisely what Philoponus claims. Simplicius mentions

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[218] Rosán (1949) 42 mentions a commentary by Proclus on Plotinus' *Enneads*, one fragment of which survives; cf. Dodds xiii n. 3, and xxi-xxiii on the influence of Plotinus on Proclus' philosophy. Although all Neoplatonic commentators show familiarity with Plotinus, a systematic evaluation of their reception of Plotinus is still a desideratum of modern scholarship. Important work has been done by P. Hadot (1972), Henry (1973, 1982, 1987), and Blumenthal (1981).

[219] Tardieu (1987) and (1990); I. Hadot (1987b, English version) 289-290.

[220] Cf. e.g. *Contra Proclum* XIII.15 524.19 (Plotinus is a Platonist *pur sang*), followed by references to *Enn.* II.1 [40], *ibid.* 524.27-527.1; see further the *Index nominum* in Rabe's edition *s.v.* 'Plotinus', p. 652.

the Stoics as being among those people (227.25); Philoponus points to the Stoa as his precedent, and with approval (*Contra Proclum* XI.1 410.1-3, 414.3-5). Assuming that Philoponus was familiar with Plotinus' arguments, an explicit confrontation with this Neoplatonic criticism of the Stoa must have seemed unavoidable to him if his polemic against Proclus were to succeed—and in this expectation we are not disappointed, as appears from the following summary.

In XI.4 (to be discussed in Chapter 3) Philoponus refutes the objection that change of magnitude is a substantial change of body which would entail the existence of prime matter. On the contrary, change of magnitude leaves body as such unaffected and so does change of quality. Moreover, Philoponus adds in XI.8, completely indeterminate matter cannot explain the change of the elements into each other, insofar as it is accompanied by change of size in fixed ratios. However, in the *Physics* Aristotle has shown that the realization of forms in a sense depends on a given size. Note that this is the problem discussed in the context of Simplicius' quotation of Aristotle concerning the matter of body and what is large and small (*GC* I.5), which he used to refute Aristotelian support for the 'Stoic' view.[221]

Philoponus' arguments suffice to demolish the claims that matter as it occurs in nature lacks magnitude (= 1, 6), that it is absurd that the size of matter determines which forms are to be realized (= 3), and that all magnitude derives from form (= 5). At the same time they contradict the *complete* lack of determination claimed in argument 10. Apart from that, they manage to re-introduce Aristotle as an authority. Matter in itself, however, is indeterminate as to size (XI.3), and when taken as such it evades the arguments which do not differentiate between the characteristic of being three-dimensional (i.e. body) and determinate size (= 3, 4, 6).[222]

In XI.5 (to be discussed in Chapter 4) Philoponus refutes the objection that a category mistake is being made, as in the following argument: Body is a substance; three-dimensionality is a quantity; thus the three-dimensional is identical with body. Interestingly, the objection to this argument is different from argument 8 (and 10 by implication) in that it does not regard three-dimensionality as a differentia, although the relation between three-dimensionality and body is as obvious to Plotinus as it is to Philoponus. Consequently, argument 8 is not yet

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[221] See above p. 107 n. 194.

[222] Simplicius too incorporates this distinction, see below.

refuted in XI.5. Philoponus goes on to show that three-dimensionality is not an accident but a differentia and an essential quantity, and concludes that it is a substance for that reason (since differentiae are substances, according to the Alexandrian school).[223] These results are repeated in XI.6. Moreover, Philoponus argues that body is not composite (against 2, 6, 8), since the notion of three-dimensionality does not entail composition. Besides, matter taken in its relation to the form with which it makes up a composite, is *ipso facto* simple as well (XI.7). The implication of the first argument that all forms are accidents in relation to matter is refuted in that the composition of substance out of matter and accidents is shown to be absurd.

In XI.7 (to be discussed in Chapter 5) Philoponus refutes the objection that prime matter must be formless because a form cannot be a substrate for forms (= 11, cf. 4). He points out that matter is a relative notion: all levels higher than prime matter have some formal determination or other, sometimes a very complex one. However, this does not prevent them from functioning as matter *in relation to* the generation of something else. This relativity-argument is a highly effective weapon against the traditional notion of prime matter, which was considered to have the *same* relation to *all* forms (= 9, cf. 1). From the Aristotelian perspective Philoponus defends, each form is only related to its *proximate* matter as the qualities of the elements are related to their *proximate* matter. However, each proximate matter taken in itself (and hence not in its role of matter any more) can always be analysed as a composite with a certain amount of formal determination—so why would it be impossible for the proximate matter of the elements to possess formal determination?

Finally, in XI.8 (parts of which I will discuss in the following chapters) Philoponus turns to the best means of defence, the attack. He points out that the assumption of three-dimensional prime matter is simply necessary to explain some features of potentiality and actuality, individualization and divisibility, besides the changes of magnitude comprised in elemental change already mentioned above. In all these cases the traditionalists run into insurmountable difficulties. As we shall see, some of these arguments also motivated Simplicius to oppose the traditional view of matter.

The only argument that remains is the seventh. But in a sense the seventh argument is self-refuting, *if* one admits that matter does not

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[223] See below, Chapter 4.

receive incorporeal forms directly but by means of the body. This admission would make prime matter superfluous for the interpretation of the realization of forms, and it would seem to confirm an important premiss of the first argument *pro*, viz. that the common substrate of the elementary qualities is body (i). Since this admission finds only minimal support in Plotinus (see T 27, p. 163), its presence in the list may be taken as yet another indication that, at least at the time of Simplicius, three-dimensional body was considered as the substrate for the qualities of the elements.

On one important issue Philoponus and Simplicius explicitly disagree with Plotinus: the explanation of divisibility and individuation. Both commentators give reason to believe that the need to provide this explanation was an important motivation for them to reconsider the traditional account of matter. Simplicius introduces the problem as a worthwhile remark in support of an important step in developing his view of matter.[224] The differences between enmattered and matterless forms, he claims, should be ascribed to matter. These differences are constituted by volume (ὄγκος), extension (διάστασις), divisibility (μερισμός) and the like, though considered without the measure and determination the forms provide.[225] Hence volume, extension, and division are to be ascribed to prime matter. This entails a reappraisal of the traditional notion of prime matter.[226]

The explanation of divisibility by means of extension is not, of course, strikingly original. We have already seen above[227] that Proclus regarded unqualified body as a manifestation of Unlimitedness because he believed it to account for the infinite divisibility of sensible bodies. We are in fact dealing with a commonplace which is derived from the notion of the continuous and hence applies not only to bodies but also to lines and surfaces: to be continuous entails the potentiality to be infinitely divided. The division between the continuous and the discrete is fundamental to mathematics since it constitutes the division between the realms of arithmetic and geometry. Given the relevance of the no-

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[224] Simpl. *in Phys.* 230.29-33 (*ad* 191 a 7); cf. 514.4-515.6. For Simplicius' account of prime matter, see below section 4.3.

[225] Though μερισμός is not immediately associated with the *possibility* of division (divisibility) the lack of any determination which Simplicius adds to his notion of it, seems to necessitate this translation. Only the forms realize an actual division in the bare extensionality provided by prime matter.

[226] Cf. also Ps.-Alex. *in Metaph.* 515.28-29.

[227] See p. 77ff.

tion of three-dimensional extension within the Pythagorean framework described above, we need not be surprised to find it here as the *explanans* of division in sensible bodies.

Earlier, in his *Physics* commentary,[228] Philoponus had already stated that prime matter is responsible for the extension of forms. In the *Corollarium de loco* Philoponus specified that the division of extension requires matter because division, which involves action and passion, requires a substrate.[229] In *Contra Proclum* XI.8 436.16-443.6 he argues that it is necessary that prime matter causes division. For division cannot supervene on matter like a quality, since every quality is incorporeal too, suffering extension along with the substrate it needs for its existence. Matter does not have such a substrate since it is supposed to be the substrate of everything else (436.16-437.8).

What kind of division are we dealing with?[230] Of the four kinds that can be distinguished (437.8-17) only one is relevant.[231] Division of a genus into species is not applicable here, for it requires divisive and constitutive differentiae which matter does not have if it is supposed to be formless (437.18-23).[232] Division of a species into individuals[233] does not apply either. For (i) it requires differences[234] in order to differentiate the individuals ranged under one and the same matter; (ii) numerically different incorporeal matters underlie different things which can therefore be distinguished one from the other. Hence matter cannot be formless, if its parts differ by means of differences.[235] Fi-

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[228] Cf. Philop. *in Phys.* 92.29-93.12.

[229] Cf. Philop. *in Phys.* 559.9-18 (T3), discussed above p. 32.

[230] On the history of division in Middle Platonist and later Aristotelian contexts see Mansfeld (1992) 78-109 and Appendix Two.

[231] For a similar overview of the notion of 'division' on the occasion of Aristotle's division of substances in the *Categories* (where [b] is left out because it is irrelevant), see e.g. Philop. *in Cat.* 53.18-55.2, Amm. *in Cat.* 37.22-38.22. A close parallel to both this division of division and the division of substance discussed in Chapter 4 is provided by the Syrian fragments of Philop. *in Isag.* 195.12-197.14 (Baumstark).

[232] For Philoponus' attack on formlessness, see below Chapter 5 p. 255.

[233] Cf. Mansfeld (1992) 94-96 with n. 44.

[234] Strictly speaking, only species are constituted by means of differentiae (διαφοραί), not individuals. The Greek term διαφορά, however, also has the more general meaning of 'difference'. For hesitation on Philoponus' part to employ the term in the case of individuals, see Chapter 4 p. 235.

[235] Cf. *Contra Aristotelem* fr. 72 W.: if the matter of celestial bodies and the matter of sublunary bodies is different, there must be differentiation between the two matters, which is absurd. Hence all bodies have the same prime matter, three-dimensional extension.

nally (iii) individuals (ἄτομα) as such are indivisible, whereas matter is still matter when divided (437.23-438.15). Neither is division of a homonymous word into his senses[236] the issue here, for matter is not merely a homonymous word; even if it were, each 'part' (sense) would have its own nature and its own differentiae (438.15-439.1).

Hence only the division of a whole into its parts remains. But if matter is divided (i) into anhomoiomerous parts it is necessarily formed (εἰδοποιεῖσθαι) and so are its parts. If matter is divided (ii) into homoiomerous parts we may ask again how what is incorporeal and partless is divided. Besides, in both cases (i-ii) the whole is a body and magnitude; if matter lacks both, it will not even have a whole and parts in this sense; if not, it is not formless (439.2-15). Even more absurd, if matter is incorporeal and formless, not only would the partless have parts, but the partless would be the cause of the division. For it is agreed that each form is incorporeal and partless according to its own definition (λόγος), only to be extended and divided along with its matter and substrate (439.15-440.6).

From these arguments, Philoponus concludes, it is evident that three-dimensional extension is the first substrate and matter of everything: it is by nature divisible and becomes the cause for the division and extension of the forms (εἴδη) that are realized in it. Therefore, too, species (εἴδη) are not divided into individuals by their own division but because they are divided along with the substrate which is divisible (440.6-18).[237]

This elaborate discussion of the notion of division makes abundantly clear that Philoponus opposes the thesis that corporeality and magnitude, and the connected features of extension and divisibility,[238] are caused by forms. Forms are incorporeal and cannot account for corporeality and magnitude in incorporeal matter. If division is an affection which forms undergo, an efficient cause should account for this affection, matter is the only candidate. Since an efficient cause needs a certain power (δύναμις) and form of its own to be capable of such causation, matter cannot be formless. Therefore three-

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[236] Cf. Mansfeld (1992) 122, 125.

[237] The ambiguity of εἶδος here is striking, though not unacceptable from the point of view of Neoplatonist metaphysics. The universal species (an intelligible form) is believed to cause the existence of its individuals by implanting an immanent form. Hence the division of the species into individuals coincides with the division of the transcendent form into immanent forms under the influence of its substrate.

[238] For this connection, see also Amm. *in Isag.* 7.13-31.

dimensional extension which itself already happens to be divisible by nature, makes the perfect candidate for prime matter.

Philoponus goes on to refute the objection that matter is divided only *after* it has received quantity and magnitude (440.19-442.25). In a long and intricate argument Philoponus rules out all options other than that matter is always actually corporeal, which is of course his own point of view. If matter is corporeal, it follows that its traditional formlessness is untenable. Philoponus' requirement that matter must explain division turns out to be important in this framework, for it is employed to rule out the possibility that matter is actually incorporeal, even after the reception of the form of body.[239] To summarize Philoponus' argument:

The following options can be envisaged:
(a) matter is sometimes actually incorporeal/potentially corporeal, sometimes actually corporeal/potentially incorporeal;
(b) matter is always potentially incorporeal;
(c) matter is always actually incorporeal;
(d) matter is always potentially corporeal;
(e) matter is always actually corporeal.

Option (a) is ruled out because it is universally acknowledged that prime matter does not itself change either way. Option (b)[240] entails (e) because the distinction between the corporeal and the incorporeal is exhaustive. Option (c) is ruled out because incorporeal matter is not able to account for division. Option (d), which I have included here for the sake of completeness, is rejected by means of a further series of arguments which I shall discuss in Chapter 5.[241] However, insofar as (d) is equivalent to the statement that matter is always actually incorporeal,[242] it can be reduced to (c) and is hence rejected along with it.[243]

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[239] Cf. Dex. *in Cat.* 59.9-35 in response to Plot. *Enn.* VI.3 [44] 8; cf. Dillon (1990) 107 n. 108.

[240] Option (b) is reached in two steps: first '*sometimes* actually incorporeal' is replaced with '*never* actually incorporeal' because change in time was ruled out. In a second step 'never actually incorporeal' is replaced with 'always potentially incorporeal', probably in virtue of the complementary nature of actuality and potentiality, though this is not explicitly stated by Philoponus.

[241] See p. 276ff.

[242] Employing the same conversion rule that Philoponus applied in order to arrive at (b), see n. 240 above.

[243] Philoponus does not provide this argument, although I believe it was open to him.

Therefore, (e) is the only remaining option. Of course, it is to be remembered that throughout this argument (in)corporeality signifies (the absence of) three-dimensional extension only. Three-dimensional extension, the form of body, suffices to enable matter to perform its function as the cause of division and individuation.

It is important to see that without the condition that matter must be able to account for division the elimination of all options except (e) would not succeed. If my reconstruction is correct, the premiss not only rules out (c) but, indirectly, (d) as well. It should be noted that the rejection of (b) and (c) together rules out the two conceivable ways in which the notion of incorporeality could be attached to matter, viz. either potentially or actually. Hence, the premiss plays an important role in the refutation of one of the traditional epithets of prime matter. Furthermore, the argument as a whole runs counter to the absolute potentiality and formlessness that are part and parcel of the traditional notion of prime matter (see further Chapter 5).

4.3 Simplicius and Philoponus: a comparison

By way of comparison, it is worth looking at the way Simplicius introduces his notion of prime matter, which is very similar to that of Philoponus. Simplicius has an entirely different objective: he *does* believe in the agreement between Plato and Aristotle. He even considers it the task of every commentator to bring out that agreement.[244] However, we have already seen that he wishes to go further than that in his commentary on *Phys.* I.7. The agreement between Plato and Aristotle is rooted in their common source, Pythagoreanism. So even when he wants to introduce an unorthodox notion of prime matter which is remarkably close to the one Philoponus defends, he cannot do so without showing that he is in agreement with Plato and Aristotle as well as with Pythagorean thought. To this end he launches into an exposition of the proper notion of prime matter, *in Phys.* 230.19-233.3, which turns almost entirely on securing the authority of the ancients.

First, he suggests a distinction between two kinds of body (σῶμα). Matter is that which is common to all physical entities. All physical entities are characterized by volume and extension, and therefore body is the proper object of physics according to Aristotle.[245] Volume, ex-

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[244] Simpl. *in Cat.* 7.23-32; cf. I. Hadot (1990a) 123-130 and esp. Narbonne (1993) 254 who speaks of 'prétendre à l'orthodoxie'.

[245] Cf. *Cael.* I.1 268 a 1 with Simpl. *in Cael.* 6.30-8.8 *ad loc.*

tension, and divisibility constitute the differences between matterless and enmattered forms. Hence we should ascribe these differences to matter, which has the potentiality to be halted in its flight from being into non-being by definite determination with regard to extension and division.[246] In his own words, he suggests:

T19 So perhaps two notions of body should be postulated, the first existing in terms of form and principle (λόγος), and determined by three dimensions, the second in terms of a slackening, a spreading and a lack of the determination of the incorporeal, indivisible, intelligible reality. The second is not determined by three dimensions in the way of a form, but is everywhere slackened, and spilt, and flows from all sides away from being into non-being. And perhaps we should postulate that matter is extension of this sort.[247] (Simpl. *in Phys.* 230.21-27; transl. after Sorabji *MSM* 23)

This suggestion is remarkable in that it avoids Plotinus' criticism while replacing Plotinus' notion of matter with something entirely different, which one might still call body. For Plotinus had stressed that all determination, including three-dimensionality and magnitude, derive from form, not matter.[248] Simplicius agrees: the definiteness of extension and magnitude derives from form. Since this type of body is what the Stoa had in mind, Plotinus' criticisms are justified. However, Simplicius introduces another kind of body which Plotinus did not envisage as a separate level and, hence, did not criticize. Simplicius speaks of a kind of body which is nothing but sheer extensionality, flowing out on all sides, and indefinite. It is the cause of the volume, extensionality, and divisibility which is so characteristic of enmattered forms. In other words, lack of determination is replaced with lack of definiteness in terms of size which leaves a kind of body, called matter, which has more features than the strictly uncharacterized prime matter of the tradition. Needless to say, Simplicius makes the same distinction Phi-

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[246] Plotinus, *Enn.* II.4 [12] 11 (see also II.4 [12] 6.16), had already considered this line of thought, but rejected it precisely because to his mind matter is merely receptive of extension. Cf. I.6 [1] 3.8-9 where a similar formulation is accepted for higher level matter.

[247] Simpl. *in Phys.* 230.21-27: Μήποτε οὖν διττὸν θετέον τὸ σῶμα τὸ μὲν ὡς κατὰ εἶδος καὶ κατὰ λόγον ὑφεστὼς καὶ τρισὶν ὡρισμένον διαστάσεσι, τὸ δὲ ὡς πάρεσιν καὶ ἔκτασιν καὶ ἀοριστίαν τῆς ἀσωμάτου καὶ ἀμερίστου καὶ νοητῆς φύσεως, οὐ τρισὶ τοῦτο διαστάσεσιν εἰδητικῶς ὡρισμένον, ἀλλὰ πάντῃ παρειμένον τε καὶ ἐκλελυμένον καὶ πανταχόθεν ἀπὸ τοῦ ὄντος ἀπορρέον εἰς τὸ μὴ ὄν. Καὶ τὴν τοιαύτην ἴσως διάστασιν τὴν ὕλην θετέον.

[248] See argument 1, 3, 4, 5, and 10 on p. 109-112.

loponus made: definite versus indefinite extension. Furthermore, he employs the same reason Philoponus gives: the explanation of divisibility and extension.[249]

Simplicius immediately provides a Pythagorean source for his unorthodox kind of matter: the famous passage of Moderatus, taken from Porphyry's *On Matter*. This passage, *in Phys.* 230.34-231.24,[250] has a long history in modern scholarship, though usually not because it provides a justification for Simplicius' notion of matter but because it contains the notion of a One above Being.[251] It pictures a first One above all being and substance, a second One which is intelligible being, i.e. the Forms, and a third One, Soul, which participates in both the first and the second One. From Soul the sensible realm comes into being though not by means of participation but by reflection (κατ' ἔμφασιν) of the three Ones. Matter is only 'a shadow cast by Not-Being as it manifests itself primally in quantity, and which is of a degree inferior even to that' (transl. Dillon). Note that this passage seems to place Matter below even its first manifestation, quantity. Simplicius' distinction between two kinds of body can only be made to agree with this if we understand 'a degree inferior to quantity' to refer to *indefi-*

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[249] In his comments on Arist. *Phys.* IV.7 207 b 34-208 a 4 (*in Phys.* 514.4-515.6) Simplicius admits that prime matter can be said to underlie infinite division, although continuous perceptible body is the *per se* substratum of division since that which is to suffer division must be extended in actuality (whereas prime matter is extended only in potentiality). This confirms both of Aristotle's phrases ὡς ὕλη τὸ ἄπειρον αἴτιόν ἐστιν (207 b 35) and τὸ καθ' αὑτὸν ὑποκείμενον τὸ συνεχὲς καὶ αἰσθητόν (208 a 1-2). Simplicius goes on to explain that matter only underlies division inasmuch as the composite is divided with regard to matter, not with regard to form. Or, to put it differently (and more in line with the excursus discussed in my text), form is only divided quantitatively with regard to the material extension which removed the lack of extension which is characteristic of a (transcendent) form. In this passage Simplicius seems to retain prime matter alongside material extension, probably because he wants to make sense of Aristotle's mention of ὕλη in the lemma. However, Simplicius' excursus shows that he would rather like to dispel the traditional notion of prime matter from the interpretation of Aristotle. *In Phys.* 514.4-515.6 shows this notion to be superfluous with regard to division, though not perhaps with regard to the enumeration of the manifestations of Unlimitedness. Further research will have to show whether Simplicius contradicts himself.

[250] See fr. 236F Smith and his apparatus for parallels; cf. Iambl. *Myst.* VIII 3, 265.1-5 which was referred to by Proclus in his commentary on *Tim.* 30 a 3-6, *in Tim.* I 386.8-13, as a source of Plato.

[251] See e.g. Dodds (1928) 136-139, Festugière (1954) 38-40, Krämer (1964) 251-253, Dillon (1977) 347-349, Meijer (1992) 6-10, etc. An exception is Sorabji *MSM* 20.

nite quantity which is inferior to *definite* quantity, not if we think of *lack* of quantity as the only thing inferior to quantity.

Simplicius goes on to quote Porphyry's quotation of Moderatus, which solves the ambiguity just noted by explicitly introducing material quantity.[252]

T20 1. Quoting the words of Moderatus Porphyry wrote those things in his second book *On Matter*, namely that "the Principle of the One (ὁ ἑνιαῖος λόγος), as Plato says somewhere, wishing to establish the genesis of beings out of itself, provided the quantity of all things according to privation of itself, by taking away from it the principles (λόγοι) and forms of itself. This he called quantity (ποσότης), without form, division and shape, though *receptive* of form, shape, division, quality and suchlike.

2. To this quantity, he says, Plato seems to have applied the majority of names, when he said 'receptacle of everything', 'formless', and 'invisible', and that it 'has a share of the intelligible in a most puzzling way' and that it 'can hardly be grasped by bastard reasoning' and everything like that. This quantity, he says, and this form (εἶδος) that is conceived through the privation of the Principle of the One that contains the principles (λόγοι) of the beings in itself, is the model[253] of the matter of the bodies.

3. The Pythagoreans and Plato, he said, called [the matter of the bodies] quantity (ποσόν) too, though not quantity taken as form (τὸ ὡς εἶδος ποσόν), but [quantity] in terms of privation and slackening (παράλυσις) and extending (ἔκτασις) and scattering (διασπασμός) and [constituted] by the deviation from being (τὴν ἀπὸ τοῦ ὄντος παράλλαξιν). As a consequence of these [features] matter also appears evil, because it flees from the Good. Moreover, matter is mastered by it (ὑπ' αὐτοῦ, i.e. the Good?) and it cannot go beyond the limits (ὅροι), when its extending (ἔκτασις) receives the principle of formal magnitude and is limited (ὁριζομένης) by it, and when its scattering receives form (εἰδοπεποιημένου) by the discreteness of number." (Simpl. *in Phys.* 231.5-24)

The One, which in this case contains all forms in itself, establishes the 'Quantity of all things' by creating the privation of itself (§1). His creation act is perhaps best described as a kind of self-subtraction: the

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[252] To this extent there seems to be an unsolved difference between the earlier and later accounts given by Simplicius: the first allows an interpretation which is different from the one he reads from the Moderatus quotation.

[253] I follow the reading of ms. F in reading παράδειγμα instead of παραδείγματα. The plural was probably inserted because Quantity and 'the form conceived through privation of the One' were not recognized as two descriptions of one and the same entity.

One creates Quantity by removing all forms from itself, in the same way as matter used to be envisaged in thought by subtracting all forms. The resulting Quantity is privation, and is merely receptive of form, shape, division, and quality.

Moreover, in his report of Moderatus Porphyry asserts that Plato's account of the receptacle refers to this Quantity (§2). This is surprising: Plato's receptacle is the place in which natural bodies come to be, but the next paragraph (§3) shows that Quantity is not the matter of the bodies, but its model. Apparently, Quantity is a transcendent form (εἶδος).

The Pythagoreans and Plato are said to have called the matter of bodies quantity (ποσόν) too (§3). This quantity is not a form but is characterized by privation, slackening, extension, scattering, and deviation from being; it appears to be evil inasmuch as it flees from the good. However, the Good does not allow the matter of bodies to spill itself out in all directions: its extension (ἔκτασις) is checked by magnitude which is provided by form, its scattering (διασπασμός) is checked by the discreteness of number.

The entire passage nicely supports Simplicius' suggestion that matter is indeterminate three-dimensional extension, and traces it back through Porphyry and Moderatus to Plato and the Pythagoreans. The perfect fit might make us somewhat suspicious: even if Simplicius truly reproduces Porphyry, and Porphyry truly reports on Moderatus, the question still remains whether we are not dealing with a (Neo)platonic forgery instead of a testimony of Pythagorean thought, much like the famous Pseudo-Archytas. We do not know whether Porphyry adduced Moderatus' testimony in order to endorse it or to refute it—the latter option would be in agreement with Plotinus. Since Simplicius admits that his own suggestion is unorthodox, perhaps the latter option is indeed more likely. Whatever the case, Porphyry provides Simplicius with a source for this notion of matter, and with the authorities he is looking for.

As a veritable ancient authority Simplicius (231.35-232.6) also adduces the Egyptians,[254] who call the foundation of their first form of

[254] The Neoplatonic interest in Egyptian thought was furthered by Iamblichus who searched for sources of mystic wisdom. Proclus often refers to the Egyptians in his commentary on the *Timaeus*, e.g. *in Tim.* I 386.8-10; see further Diehl, *Index verborum s.v.* ὁ Αἰγύπτιος. For earlier Platonic interest in Egyptian thought, see Dörrie/Baltes (1990) 166-174, 425-450.

life, water, 'matter' and think of it as a kind of slime. It is like a place (χώρα) which lacks definite form and only serves as foundation for intelligible nature. Again, Simplicius finds confirmation that the extension of each form in the sensible realm is based on material extension.

Simplicius realizes that by this time people will have begun to wonder how all this is to be reconciled with Aristotle's and Plato's notion of matter as the substrate for contraries (232.7-23). He has two remarks: first, from other accounts one might get the impression that body is the ultimate substrate, and that it is eternal because it has no contrary. Then all body, celestial and sublunary alike, would seem to be eternal. The Pythagorean account, on the contrary, preserves the idea that the corporeal extension of sublunary entities is generated and corrupted together with the extended form of e.g. man or horse. Secondly, matter is what remains during substantial change, in the same way as substance remains during accidental change. If the Pythagorean notion of matter is inserted here, the result is that substantial changes revolve around this type of quantity or deviation from being which is extension and material volume. The change of water into air involves a *formal* change of magnitude: the lesser amount is not contained in the larger amount which comes into existence, but a completely different formal magnitude is realized.[255] Even so, material extension remains throughout these changes, for both forms are material, divided, sensible and not different so far as matter is concerned; after all, differences are based on forms.

Simplicius' first remark testifies again that 'other accounts', which probably include those of his contemporaries, give the impression that body is the ultimate subject. This chapter has shown that, indeed, Platonists from Syrianus up to Simplicius' day formulated precisely this claim, without being more precise about the notion of 'body' involved. From this perspective, Simplicius' own theory can be seen as an attempt to develop this prevailing idea in such a way as to preserve some important distinctions: sensible bodies are subject to generation and corruption, corporeality and all; moreover, Plotinus' emphasis on for-

[255] Cf. Plotinus, arg. 5-6. Contrast Philoponus' notion of intension and remission of three-dimensionality, Chapter 3 p. 153ff. It is noteworthy that Simplicius too, in a similar context, draws attention to the problem of change of magnitude involved in substantial changes; compare his earlier quotation of Arist. *GC* I.5 from the same context (see n. 194 above).

mal determination must be preserved or the Platonic hierarchy is jeopardized. While doing so, Simplicius eliminates a source of misunderstanding threatening the genuine Neoplatonic account of generation as defended by Plotinus.

On the other hand he goes along with the prevailing idea in that an indeterminate form of three-dimensional extension is allowed to characterize prime matter. Perhaps he thus acknowledges the force of the Aristotelian argument that body has no contrary and is not subject to generation and corruption, at least not according to the received Aristotelian explanation of these phenomena. In this respect it is relevant that in his commentary on *De Caelo* Simplicius carefully explains *Cael.* I.1 in the sense that body is the subject matter of physics. So from this perspective, too, he might have felt the need to have all physical phenomena explained without going beyond the level of body.

Finally it must be shown that Aristotle is connected to this Pythagorean family. Simplicius once again resorts to *Phys.* IV.2, where Aristotle is discussing the relation between place and matter in Plato.[256] He quotes 209 b 6-9[257] and interprets it as if indeterminate matter and the extension of magnitude coincide. In this way the text yields his distinction between indeterminate extension as matter, and determinate magnitude as form.

Interestingly, Simplicius goes on to express doubts about the idea that matter is the reflection of either the lowest forms or the first One (*in Phys.* 232.30-233.2). One and Being are one and being to a maximum degree, whereas matter is constituted by deviation from being and is only there because the generative power of Being had to establish the reflection of Being, i.e. the sensible realm, too. For Simplicius, apparently, matter is not part of the emanation process, but a paradoxical requisite of it; matter itself is not the product of the generative power of the One.[258] No wonder Simplicius closes his digression on

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[256] For Aristotle, see T10, p. 57; for Simplicius' earlier use of this passage, see p. 120.

[257] The quotation contains an interesting *varia lectio* which is recorded in the *apparatus* of the OCT edition. In 209 b 6-7 OCT reads ἦ δὲ δοκεῖ ὁ τόπος εἶναι τὸ διάστημα τοῦ μεγέθους, ἡ ὕλη whereas Simplicius has ἦ δὲ δοκεῖ ὁ τόπος εἶναι τὸ διάστημα τοῦ μεγέθους, ταύτη ἡ ὕλη δόξει. It is possible that Simplicius felt the need to stress the connection with matter in this context and therefore changed the emphasis a little.

[258] It is an interesting question how Simplicius would have interpreted T20 above: there the first principle is explicitly said to cause the existence of matter by emptying itself of all forms.

matter with the apology that he only elaborated on the issue because he was not content with the prevailing notion of matter. In criticizing the doctrine that matter derives from the first One Simplicius goes beyond the realm of Aristotelian physics, and beyond the need of the commentary. Therefore it would seem that Simplicius also distances himself from the Neoplatonic notion of indeterminate prime matter as such.

If we compare Simplicius' exposition with Philoponus' excursus on matter, we may conclude that both Philoponus and Simplicius were developing the prevailing Neoplatonic doctrine on matter, viz. that body is the first substrate. We can rule out that Simplicius is correcting Philoponus' *Contra Proclum.* Simplicius claims that he did not read Philoponus' *Contra Proclum*,[259] but even if we do not believe him, it is unlikely that he would hesitate to scorn Philoponus—as his fierce attacks on Philoponus elsewhere in the *Physics* commentary testify. Therefore it is more likely that both philosophers represent a development within Neoplatonism which put three-dimensional extension between traditional prime matter and the elements.

In view of the debate concerning the chronology of Philoponus' thought, this is a conclusion of considerable significance. For it means that we can do without Christianity as a motive for the development of Philoponus' theory of three-dimensional extension as prime matter: it is paralleled in the person of Simplicius, a convinced pagan. Rather, this development was prompted by the demand for an explanation of divisibility and individuation different from that of Plotinus, without running aground on the latter's arguments against Stoic materialism. In other words, in contemporary (meta)physics the traditional explanations were no longer considered satisfactory—this dissatisfaction does not sprout from Philoponus' Christianity. I believe it is a distinct possibility that Philoponus had already become acquainted with this view of matter before 529 AD, and that his attack on Proclus incorporates state-of-the-art *Neoplatonic* doctrine which he then turns against Proclus' Neoplatonic system. In that case, the change of 529 AD was not so much a change of doctrine as a change of purpose and perspective.

There is one interesting difference between Philoponus and Simplicius in their presentation of the 'current opinion' on matter. Philoponus already includes the difference between body as such and body determined by large and small (which he calls its first differentiae) in

[259] Simpl. *in Cael.* 135.26-136.1 (= part of *Contra Aristotelem* fr. 72 W.).

his account of the Platonists' view of matter and argues for it elaborately.[260] If Philoponus really considered this distinction as belonging to the traditional account, his sources are one step ahead of Simplicius, and the distinction may not be Simplicius' idea. Indeed, in Chapter 3 we shall see that Philoponus already used the distinction in his commentary on *De generatione et corruptione*.[261]

It should be noted, however, that Philoponus needs the distinction to refute the first objection concerning growth, viz. that growth is an essential change of body (see Chapter 3). If the traditionalists were familiar with the distinction, they could have phrased this objection only if they consciously neglected the distinction, or if they (wrongly) took Philoponus' notion of body to be equivalent to body which is already determined as to size. However, as Philoponus' triumphant reference to his earlier mention of the distinction shows,[262] he also has polemical reasons to include the distinction in the traditional account. It smoothes the transition to his own point of view, which is then reduced to abolishing the traditional prime matter. He can simply make it look as if he takes over a stratification of the lower levels which itself already yields the redundancy of traditional prime matter: his opponents did not even see the significance of their own distinction. It may be relevant that the distinction is *not* included in the summary of the *communis opinio* in XI.1 409.20-28; therefore the summary closely resembles Philoponus' own traditional account of the lowest strata in *in Cat.* 65.10-66.5, which lacks this subtlety too.[263]

There is a possible source that may explain the converging accounts of our two philosophers: Plotinus. In his treatise on matter (*Enn.* II.4 [12]) Plotinus argues elaborately for a clear notion of matter, without a trace of magnitude. He does however admit that there is a certain temptation to associate matter with volume:

T21 1. And [matter] does, indeed, have an imaginary appearance of volume because the first, so to speak, of its capacities is a capacity for volume, but the volume is empty. For this reason some people have said that matter is identical with the void. I say 'an imaginary appearance of volume' because the soul, too, when it is keeping company

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[260] *Contra Proclum* XI.1 408.6-409.3.

[261] See Chapter 3, p. 142.

[262] Philoponus explicitly claims that he already 'potentially' answered the objection when he mentioned the distinction (*Contra Proclum* XI.4 417.17-20). The distinction is also implied in his own exposition (XI.3 413.25-27).

[263] For its context, see Chapter 4 p. 230-233.

> with matter, having nothing to delimit, spills itself into indefiniteness, neither drawing a line round it nor able to arrive at a point; for if it did it would already be delimiting it. For this reason matter should not be called 'large' separately or again 'small' separately, but 'large-and-small'.
> 2. [Matter] is 'volume' in this sense and 'without magnitude' in this sense, that it is the matter of volume, and when volume is contracted from the great to the small and expands from the small to the great, matter, so to speak, runs through the whole range of volume: and its indefiniteness is volume in this sense, as receptacle of size in itself; but in imaginary representation it is volume in the sense we have described. (Plot. *Enn.* II.4 [12] 11.27-38; transl. after Armstrong [1966])

Plotinus is willing to grant that matter's first capacity (ἐπιτηδειότης) is to receive volume; therefore it appears to receive everything else in magnitude.[264] Since Plotinus conceives of volume (ὄγκος) as being empty, there seems to be no reason not to identify his 'volume' as another term denoting mere three-dimensional extension.[265] The mind, in its attempts to grasp matter, perceives this *appearance* of volume (φάντασμα τοῦ ὄγκου) which, Plotinus claims, induced some to equate matter with the void. This statement reminds us of Aristotle's *Phys.* IV.7 214 a 13-14 and 209 b 6-7, where Aristotle speaks of the Platonic suggestion that place and matter are identical.[266] We have already seen that Simplicius adduced this text precisely to defend his claim that according to Aristotle too matter was indefinite three-dimensional extension.[267]

Perhaps it is not too much of a speculation to say that Plotinus' distinction between volume and magnitude inspired Simplicius to introduce a distinction between two types of 'body', indefinite and definite, keeping in mind that with him 'body' refers to three-dimensional extension only.[268] Plotinus' negation of magnitude and size

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[264] Cf. *Enn.* II.4 [12] 11.18-19.

[265] Earlier he put διάστασις (II.4 [12] 11.6) into the mouth of an imaginary critic, and employs διάστημα (II.4.11.18) alongside ὄγκος. Philoponus also uses the latter term in this sense throughout his treatise on matter, see e.g. 408.8, 424.10 in relation to the definition of 'body'. Plotinus does not seem to use corporeality (σωματότης) in the restricted sense of three-dimensional extension, judging from e.g. *Enn.* II.4 [12] 12.34-38, II.7 [37] 3.1-4.

[266] See T10, p. 57.

[267] Simpl. *in Phys.* 232.24-30.

[268] Simpl. *in Phys.* 230.21-27 (T19). Simplicius' lofty description of the elusiveness of prime matter may very well owe something to this Plotinian passage, al-

at least comprises the negation of *definite* size. His reminder, preceding the text translated above, that it would not be warranted to transfer the presence of a definite size (τι μέγεθος) in natural bodies to prime matter, seems to confirm this. So does his suggestion that the presence of μέγεθος in matter would prohibit the Demiurge from making his products of any size he wishes.[269]

Interesting, too, is Plotinus' confirmation of Plato's phrase 'the large-and-small' which he believes makes clear that matter itself is neither large nor small. Not only does this passage strengthen the impression that Plotinus wants to deny matter *definite* size alone; but we shall see that Philoponus provides a very similar account concerning three-dimensional extension: three-dimensional extension does not comprise either large or small in its definition, nor both together.[270] The context in Philoponus, however, makes clear that we are to read his argument as a *denial* of the appropriateness of the description 'the large-and-small': neither large nor small nor the combination of the two has anything to do with matter.

On final analysis, the views of Philoponus and Simplicius as far as the level of matter is concerned almost entirely converge. They both retain the notion of prime matter, and they both believe it to be indeterminate three-dimensional extension. They both state that this matter explains the extensionality and divisibility of sensible forms. However, they differ as to the role of definite measurements: for Philoponus three-dimensionality entails a certain range of magnitude, whereas for Simplicius definite measurements are supplied by the form; in this he agrees with Plotinus.[271] More importantly, Philoponus and Simplicius differ in the way they present their views. Philoponus squarely opposes Proclus, the Neoplatonic tradition, and Aristotle; Simplicius on the other hand makes it look as though he were seeking harmony between

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though both accounts will ultimately go back on Plato's description of the primordial chaos of the *Timaeus*. Cf. Plot. *Enn.* II.4 [12] 15.25-28, III.6 [26] 7.13-31.

[269] See Plot. *Enn.* II.4 [12] 11.21-25 and 8.16-18 respectively. The latter text reads: ἢ δουλεύσει [*sc.* ὁ μόρφην διδούς] τῷ μεγέθει αὐτῆς [*sc.* τῆς ὕλης] καὶ ποιήσει οὐχ ἡλίκον θέλει, ἀλλ' ὅσον ἡ ὕλη βούλεται. Also note the distinction between διάστασις and μέγεθος in 11.7 which may be read as a distinction between extension and definite size. On the other hand one should keep in mind that μέγεθος is the general term for extensional objects in mathematics (line, surface, solid), where definite size is not relevant. Hence the poly-interpretability of the term μέγεθος asks for the distinctions the later commentators provide.

[270] *Contra Proclum* XI.4, see further Chapter 3.

[271] Cf. argument 5 on p. 110. For Philoponus, see further Chapter 3, p. 157ff.

all parties involved, including the Pythagoreans; his disagreement is with the current interpretation of Aristotle. I believe that these modes of presentation show how these two philosophers see their own position in the history of philosophy. Philoponus feels he is breaking away from the tradition and heading in a new direction where he has no need for the preservation of ancient thought. Simplicius wants to represent the tradition, to explain and defend it, and to show even more coherence than had hitherto been revealed, in spite of his actual divergence. It is hard to resist the suggestion that Philoponus knows that his belief in the Creation will eventually require a break with pagan philosophy, the very pagan philosophy which Simplicius is trying to preserve.

To conclude it may be useful to list the bewildering range of the vocabulary referring to three-dimensional extension. Apart from the rather unproblematic διάστασις (extension) and other derivatives of the same root, we find ὄγκος (volume), τὸ τριχῇ διαστατόν (three-dimensional extension), σῶμα (body), and ἄποιον σῶμα (unqualified body) which may all denote mere three-dimensional extension, especially in a physical context. None of these terms necessarily implies definite size, although all of them sometimes do. In terms of clarity σῶμα (body) is the worst: it may refer to (i) a physical body, i.e. an element or a more complex physical substance, always implying definite size, (ii) three-dimensionality plus resistance, (iii) a mathematical solid as such, (iv) the solid as a Pythagorean immanent principle in physical bodies, (v) three-dimensional extension plus definite size, (vi) Philoponean or Simplician three-dimensional extension indefinite as to size. On more propitious occasions, the absence of the notion of definite size is signalled by means of phrases like ἁπλῶς x (x without qualification, x as such), x ᾗ x (x *qua* x), x καθ' αὑτό (x in itself). On other occasions however, these phrases serve to exclude qualities rather than definite size. The term μέγεθος (magnitude or size) may signify all continuous mathematical objects together (it is the genus of lines, surfaces, and solids) and hence also sometimes extension or extensionality; but of course it can also simply mean (definite) size.

CHAPTER THREE

FIRST OBJECTION: CHANGE OF VOLUME

After establishing the main characteristics of his new definition of matter (*Contra Proclum* XI.3) Philoponus raises three objections to this view (*Contra Proclum* XI.4-5, 7). They serve not only to forestall some obvious criticism but also to elucidate his own ideas in more detail. In Chapters 3 to 5 each of these objections will be discussed. The final chapter of Philoponus' excursus (*Contra Proclum* XI.8) consists of a series of absurdities that follow from the traditional view of prime matter and from the doctrine exemplified in the objections. These absurdities will be treated along with the objection which is concerned with the same problem.

In *Contra Proclum* XI.4 Philoponus confronts the first objection, viz. that the change of volume which occurs as a concomitant of generation or corruption entails the generation and corruption of three-dimensionality. Philoponus reiterates the argument of XI.3 that *if* we never see body-as-such turn into the incorporeal or vice versa, there is no need to assume a non-corporeal substrate for the three-dimensional. Some people, he says, attack the conditional clause. They object that we *do* see generation and corruption of body-as-such: wine-jars filled with new wine burst because the wine turns into *pneuma* which has a larger volume.[1] The same phenomenon occurs when water evaporates, wood burns to smoke, or food is digested. The opposite can be seen when lighter bodies turn into heavier ones, e.g. when a large quantity of air turns into a small quantity of water. In all these cases the volume increases without new material being added (which would be growth), or decreases without material being removed (which would be diminution).[2] The volume changes because something is generated which

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[1] One explanation of this phenomenon is to be found at Alex. *Mixt.* 232.5-13: the *pneuma*, which exists in a potential state in the new wine, is close to its state of perfection so that only a little fermenting suffices to cause its separation from the wine. Cf. Todd (1976) *ad loc.* for all references to Alexander's *De mixtione.*

[2] For the distinction between change of volume in growth and in generation or corruption see e.g. Arist. *GC* I.5 321 a 9-18, Alex. *Mixt.* 234.4-9.

needs more or less space (τόπος).[3] Hence these processes entail generation and corruption of three-dimensional extension as such. In order to account for these changes in the usual way a non-corporeal substrate is needed. Hence the three-dimensional cannot be prime matter (XI.4 415.11-417.17).

In response Philoponus points out that his earlier description of the three-dimensional as such already contained one solution to this problem: smallness and largeness were designated as the first differentia of body.[4] Of course this is not to say that the three-dimensional ever *exists* without definite size, just as the genus animal[5] does not *exist* without being either rational or irrational. However, neither rational nor irrational belong to the definition of animal. In the same way definite size is not included in the definition of the three-dimensional either (XI.8 433.24-434.1). Therefore, change of magnitude does not affect body according to its definition (XI.4 421.14-15 οὐδεμίαν τροπὴν κατὰ τὸν τοῦ σώματος λόγον), just as changes of weight, temperature, or quality do not affect body as such.

The situation is similar in the case of growth, Philoponus explains (XI.4 417.20-418.10). In growth nothing incorporeal becomes corporeal[6] but the nature of body *qua* body remains the same whereas the change that is growth only adds to the quantity of the growing thing.[7] Insofar as the change of a small volume of water into a larger volume of air means that air is generated out of water, there is corruption of water and generation of air. However, insofar as nothing incorporeal becomes corporeal or vice versa, neither before nor during nor after the corruption of water, body *qua* body only suffers a change of quantity.

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[3] Τόπος in the sense of occupied three-dimensional space is also found in Aristotle, e.g. *Cat.* 5 a 9-15, 6 a 11-15; *Phys.* 219 a 10-20; *Cael.* 287 a 21-22; *Meteor.* 368 b 13-15, 343 a 8, 353 b 2-7, 360 b 18-19, 363 a 12ff. Cf. Algra (1995) 123-136, 182-189; he rightly remarks that Aristotle's 'classical' concept of place as the boundary of the surrounding body would hardly have been of use in these cases (*o.c.* 189). Contrary to Aristotle, Philoponus believes that τόπος in the technical sense is also three-dimensional, see his *Corollarium de loco, in Phys.* 557.8-585.4.

[4] See Philop. *Contra Proclum* XI.1 408.4-409.3, cf. XI.8 429.2-430.18, following Rabe *ad* 430.8 who suggests supplying διαφοράς with ἄλλας rather than assuming ἄλλο *sc.* μέγεθος instead of ἄλλας. Cf. Philoponus' elucidation in 430.9-11.

[5] Note the phrase 433.27-28 τὸ ἁπλῶς ζῷον which refers to animal-in-general, i.e. the genus.

[6] See Arist. *GC* I.5 321 a 5-7.

[7] See Arist. *GC* I.5 322 a 16-28.

Moreover, if body is defined by three-dimensional extension, a change of body *qua* body would be a change in the dimensions, i.e. body would lose either all or some of its dimensions. However, if in all changes the three-dimensional is preserved it is entirely immutable (XI.4 418.25-419.5). However, it is immutable only insofar as it is a three-dimensional volume, not insofar as it is indeterminate or unqualified (XI.8 434.2-7). Change of magnitude is merely a change of the quantity of body, in which the dimensions of the body are expanded or contracted; it is not generation or corruption of body as such (XI.4 419.5-16).

At XI.8 434.9-435.2 we learn that this expansion and contraction of the dimensions, which is to be regarded as a natural capacity of magnitude (μέγεθος),[8] is limited. The upper limit is provided by the size of the universe as a whole beyond which it is physically impossible to extend.[9] There is also a lower limit, because infinite divisibility is to be distinguished from infinite contraction. Earth manifests the densest contraction possible; if it were possible to contract further that would have happened.[10] The expansion and contraction of smaller volumes occurs according to the same ratio.[11] As far as expansion and contraction are concerned, then, the three-dimensional is not indefinite (ἀόριστος) at all.

A different line of response consists in pointing out that large and small as such are different from the three-dimensional in all respects. If, on the one hand, being large or small or large-and-small,[12] and on the other hand being three-dimensional do not in any way coincide, a change of large to small or vice versa does not cause a change of three-dimensionality as such (XI.4 419.16-421.4).

Philoponus' discussion of this point is quite exhaustive. As to the intension of the notion of the three-dimensional, he points out that large and small are relatives, which implies that nothing is large or small in itself but only in relation to something else (XI.4 419.22 πρὸς

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[8] See Philop. *Contra Proclum* XI.8 433.7-8.

[9] Contrast Plot. *Enn.* III.6 [26] 16.15-20, who regards the current size of the universe (if limited indeed) merely as the effect of the forms present in matter; if all forms that constitute the universe were taken away, it would appear that matter does not have a size of its own.

[10] An expression of the principle of plenitude, cf. Sorabji *Necessity* Ch. 8.

[11] Cf. XI.8 436.1-3.

[12] According to Aristotle's reports about Plato's unwritten doctrines (Arist. *Phys.* I.4 187 a 17, III.4 203 a 16; *Metaph.* I.7 988 a 26) matter is there called the 'large-and-small'.

ἄλλου παράθεσιν). Consequently, the same thing may be both large in relation to A and small in relation to B. However, three-dimensionality does not belong to the class of relatives because bodies are each three-dimensional independently (αὐτὸ καθ' αὑτὸ ἀπολελυμένως). Therefore both being large and being small are different from being three-dimensional. Otherwise, if being large (or small) were the same as being three-dimensional, nothing small (or large) would be three-dimensional. Since this is not the case three-dimensionality as such is different from large and small (XI.4 419.16-420.18).

On the other hand it is obvious that large and small have a larger extension (XI.4 420.18 ἐπιπλέον ἐστίν) than three-dimensionality. Surfaces and lines are also called large and small, although they are two- and one-dimensional respectively (XI.4 420.18-25).

Finally, if large and small as such differ from each other, but nothing three-dimensional differs from another three-dimensional as such, the three-dimensional is not identical to large and small taken together either (XI.4 420.25-421.4). In other words, if the three-dimensional does not display the kind of inherent difference such as is found in the pair of large and small taken together, the three-dimensional cannot be identical with the pair of them either.

It seems not implausible to suggest that the interest in the large and small was partly prompted by the Platonic identification of matter with 'the large-and-small'. In his commentary on *De generatione et corruptione* Philoponus accepted the term 'large-and-small' and interpreted it as referring to the receptivity of matter for both contraries.[13] This is not unlike Plotinus,[14] who also explains why 'large-and-small' is the proper name to use for matter. For in an attempt to grasp matter the soul 'spills herself into' an 'indefiniteness' (εἰς ἀοριστίαν χεῖ ἑαυτήν) which has no boundaries. Therefore it is impossible to call matter either large or small separately. In Philoponus' *Contra Proclum* three-dimensional extension has assumed the role of prime matter and we find that Philoponus also redefines the relation between matter and large and/or small. The three-dimensional is not essentially related to either large, or small, or large-and-small. Apart from the wider significance of this argument for Philoponus' attitude towards the Platonic tradition, it is certainly convenient as a means to refute the objection that change of volume is essential to body as such.

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[13] See Philop. *in GC* 225.13-19, 226.3-15; *in Phys.* 93.6-7.

[14] See Plot. *Enn.* II.4 [12] 11.29-34.

At XI.8 429.2-430.18 Philoponus turns this argument against his opponents. For the traditional view has it that prime matter has no connection with size at all because it is able to receive every magnitude just as it is able to receive every form.[15] Philoponus replies that if this were true an arbitrary amount of one element would be able to change into an arbitrary amount of another element. However, we observe that the generation and corruption of the elements occurs according to fixed ratios (XI.8 430.22-23 οὐκ ἀορίστως εἰς ὁπηλικονοῦν ἀλλὰ μέχρι τινὸς ὡρισμένου ὄγκου). Therefore, if prime matter is to account for this it cannot be entirely indeterminate (ἀόριστος).

The generation of homoiomerous bodies and living beings also shows a relation between a definite size and the generation and corruption of forms. Division leads to corruption if it exceeds the minimum size required for the form at hand. Water, for instance, perishes into air when divided too far. Whereas growth depends on the addition of material, the generation of forms depends on the quantitative limits provided by the material, as Aristotle proved in the *Physics*.[16] So if no limitations of this kind inhere in prime matter, the relation between size and form as observed in the change of the elements cannot be explained (XI.8 431.2-433.3).

All these facts can be explained only on the premiss that prime matter is three-dimensional and merely indeterminate as to definite size, not on the premiss that it is incorporeal and without magnitude.[17] The objection concerning change of volume has resulted in a careful analysis of the sense in which the newly conceived prime matter is indeterminate (ἀόριστος) and the senses in which it is not. It is indeterminate only with regard to definite size. It is not indeterminate in that it is a three-dimensional volume which is immutable as such, and which enables us to provide an explanation for the division, expansion and contraction that we see in nature.

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[15] Philoponus ascribes this view to 'Plato and the rest of them', XI.8 429.8-9. Compare Philoponus' interpretation of Plato's designation 'large-and-small' above, and Chapter 2 p. 56.

[16] See *Phys.* I.4 187 b 16-22 with the important commentary in Philop. *in Phys.* 96.26-106.4.

[17] Explaining ἀμεγέθης, Philoponus adds (431.1-2) that matter is not a line or a surface; although a line and a surface are not bodies (ἀσώματος), they are still magnitudes (μέγεθος). This addition is meant to clarify the meaning of the couple ἀσώματος–ἀμεγέθης which may refer to either 'incorporeal'–without size' or 'not a mathematical body'–'not a mathematical magnitude'.

It is noteworthy that both Philoponus' opponents and Philoponus himself appeal to observation to support their position.[18] At one point Philoponus clearly formulates this methodological starting-point:

T22 For, I think, he who discusses things of nature should not himself construct theories which are not in harmony with reality but he should adapt the theories about them so as to be in harmony with and akin to the phenomena. (Philop. *Contra Proclum* XI.8 435.3-7)[19]

This is a clear evocation of Aristotle's famous dictum that a physicist should try to explain the phenomena.[20] The traditional concept of prime matter fails because it does not explain all the phenomena. Only if we accept that three-dimensional extension is prime matter can we explain division, the capacity for expansion and contraction within specific boundaries, and the quantitative conditions that determine the realization of forms. Hence the claim that an incorporeal matter underlies reality is false (XI.8 435.19-436.16).

I GENERATION & CORRUPTION VERSUS GROWTH & DIMINUTION

The foregoing account has touched upon several issues which deserve a more detailed examination. For instance, we noted that Philoponus develops Aristotle's careful distinction of generation & corruption from growth & diminution in *GC* I.5 in an interesting way. In the following sections I shall trace three different strands found in Philoponus' commentaries on this Aristotelian text. Together, they tend towards a convergence of the matter of growth and the matter of generation, which in the end provides all ingredients necessary for the position outlined above. The three strands are:

1. *GC* I.5 shows a tension between Aristotle's distinction between growth and generation on the one hand and his use of substantial

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[18] See e.g. XI.4 415.11-12 τῆς τῶν πραγμάτων ἐνεργείας; 416.15-18 ἔτι δὲ ἐναργεστέραν ἄν τις κατίδοι τὴν ἐκ τοῦ ἐλάττονος σώματος εἰς τὸ μεῖζον μεταβολὴν καὶ αὐτῇ τῇ αἰσθήσει ὑποπίπτουσαν; XI.8 430.4 μήδὲ ἡ ἐνάργεια τοῦτο ὑπαγορεύει; 433.1-2 εἰ ..., τοῦτο δὲ οὐχ ὁρῶμεν γιγνόμενον, ψεῦδος ἄρα.

[19] The Greek runs: δεῖ γὰρ οἶμαι τὸν περὶ τῶν φυσικῶν πραγμάτων διαλεγόμενον οὐκ αὐτὸν συντιθέναι λόγους ἀσυμφώνους τοῖς πράγμασιν ἀλλὰ τοῖς φαινομένοις συμφώνους τε καὶ προσήκοντας ἐφαρμόζειν τοὺς περὶ αὐτῶν λόγους.

[20] See e.g. Arist. *Cael.* III.7 306 a 5-17; *PA* I.1 639 b 5-10, 640 a 13-15. Cf. the classic paper by Owen (1961), with Nussbaum (1982), Lennox (1991).

changes in illustrating growth on the other. This fact gives rise to two questions:
a. is *GC* I.5 partly devoted to the matter of generation and corruption, or is Aristotle only concerned with the matter of growth?
b. what is the relation between the matter of generation and the matter of growth?

2. In Aristotle's arguments concerning both generation and growth the threat of self-subsisting void plays an important role. This seems to be of special interest to Philoponus.
3. Philoponus' development of the notions of fitness (ἐπιτηδειότης) and latitude (πλάτος) provide the necessary starting-point for a new explanation of both growth and generation.

1 The matter of growth

The first book of Aristotle's *De generatione et corruptione* is devoted to the clarification of some basic concepts which are necessary for a proper understanding of the substantial change of the elements into each other. To that end Aristotle carefully distinguishes generation and corruption from other types of change. In changes of place, quality, and quantity, there is one substrate that underlies the contraries and remains the same throughout the change (314 b 26-315 a 3). Generation and corruption take place when something changes entirely, i.e. according to *both* its formal and material factor. When a change occurs accidentally with regard to its properties, it is qualitative change (317 a 20-27).

In *GC* I.4 Aristotle refines his distinctions. Qualitative change occurs when the substrate (i.e. that which changes) is perceptible and remains, while only changing with regard to properties which belong to a range that comprises two contraries (e.g. healthy—ill). Generation of one thing and corruption of something else occur when the whole thing changes without a perceptible substrate remaining (e.g. water becomes air) (319 b 8-21). Matter properly speaking is matter receptive of generation and corruption, whereas in other changes matter is found in a certain way, i.e. because all subjects are receptive of certain contraries (320 a 2-5).

With regard to growth Aristotle's final discussion in *GC* I.5 yields the result that in growth the form remains and can be said to be growing throughout, whereas matter can only grow by portions (321 b 19-

34).[21] That which is added is potentially like that which is growing (flesh, blood) though actually something else (water, bread). The addition becomes unified with the growing thing as this potentiality is actualized by the recipient's form. This generation of e.g. new flesh or blood, which entails the corruption of the water or bread, constitutes nutrition. In such changes growth is constituted by the fact that *a certain quantity* of water has the potentiality to be changed into the composite of *a certain quantity* of blood (321 b 34-322 a 7, 16-23). According to Aristotle this is how nutrition and growth are to be distinguished: two different ways of being of one and the same process. Since on this view nutrition is a special case of generation and corruption, this distinction amounts to a distinction of growth from generation and corruption.

However, as is clear from the examples above, Aristotle frequently uses substantial change (e.g. of water into air) to illustrate growth. This is not as surprising as it may seem: Aristotle has pointed out that the term 'matter' is primarily used for the matter of generation and corruption. The application of the term to the matter of growth or qualitative change is derived from the common feature of being a substrate that is receptive of contraries (*GC* 320 a 2-6). Moreover, Aristotle carefully describes the relation between the matter of corporeal substance and the matter of magnitude and the affections (πάθη), and he stresses that these two matters are identical in place (*GC* 320 b 22-25). However, given that Aristotle is striving to elucidate the differences between the several kinds of change it cannot be denied that his examples are somewhat confusing.

Before assessing Philoponus' treatment of the relation between the two kinds of matter in the framework of his commentary on *GC* I.5, it is useful to provide a summary of the complex *theoria* that opens the commentary on *GC* I.5. There Philoponus provides a full-blown division of the argument in *GC* 320 a 25-321 a 2:[22]

The matter of growth (i.e. that out of which growth takes place) is (72.26)
I potentially body and magnitude, and actually incorporeal and without magnitude,

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[21] Cf. Alex. *Mixt.* 234.2-9 and *Quæst.* I.5, with Sharples (1992) 36-37; Philop. *in GC* 106.3-11.

[22] The interpretation of Aristotle's text raises far more problems than will be apparent from our discussion of Philoponus. See e.g. Joachim (1922) 113-123, Williams (1982) 103-107.

1. ... which exists as a separate nature (73.1), for instance
   a. a *point*: however, a point exists in a body; it does not add anything in terms of magnitude; its expansion implies void or body without place, both of which are impossible.
   b. *void*: however, void does not exist (*Phys.* IV.6-9).
   c. *imperceptible body*: this is unqualified body, i.e. the three-dimensional. Three-dimensionality entails being in a place; qualities determine in which place the thing is, e.g. fire above, earth below. The fact that the body must be equal in size (ἴσος) to its place implies quantitative determination. Hence the three-dimensional as such is already in a place. However, this entails being in a *certain* place, which in its turn implies that it is one of the elements because the elements exhaust all possible places. Therefore unqualified body is not an acceptable option for the matter of growth. Aristotle left out all this because he believed it is evident.

2. ... which exists in another body—for it is universally accepted that growth occurs by addition from the outside, which rules out that the matter of growth exists in the growing thing itself (74.5).
   a. *without being a part or an affection* of that which it is in or without contributing anything to it. E.g. air would come out of water as out of a jar. This entails an infinite number of matters as well as actual void which is going to be occupied by the emerging air, since the air did not occupy a place of its own while it was in its 'jar', or else potential body turns into actual body, but we never see this kind of change occurring.
   b. *being a part* of that which it is in and taken from there to be added to whatever is growing; however, this entails II, viz. that the matter of growth is actually body and magnitude.
   c. *suggestion* (75.6): the matter of growth could be in another body in the same way as formless matter is in an actually formed body. After all, this matter is potentially body and actually incorporeal, and exists as substrate and matter in an actual body.
   d. *the suggestion refuted* (75.11): formless matter is the matter of generation and corruption, whereas the matter of growth is quantified body (πεποσωμένον σῶμα). The suggestion is beside the point because the matter of generation and corruption is not the issue here.[23] The difference between the two matters explains why in generation and corruption one and the same matter underlies a smaller as well as a larger volume (e.g. when water turns into air), whereas in growth the increase matches the amount of food added. However, generation precedes growth: food becomes bile in the stomach, which turns into blood in the liver. All these changes take place in definite quantities which entails that the matter of growth is already quantified.

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[23] Tsouyopoulos (1969) 12 wrongly interprets this passage as if Philoponus would deny the possibility of an unqualified body *tout court*, after Plotinus.

II Since all possibilities under both (1) and (2) are ruled out, only the second option remains: *the matter of growth is actually body and magnitude* (77.5).[24]

Three things are important to note here: although Philoponus maintains the principle that the interpretation of the text should match the topic of the chapter if at all possible,[25] he introduces the relation between the matter of growth and prime matter by the suggestion that the matter of growth might exist in the same way as formless matter (I.2c). At this stage of the commentary the suggestion is rebutted by a clear distinction between formless matter and quantified matter, quite in line with Aristotle (I.2d).

Secondly, the explanation of the increase of volume which occurs in the change of water into air (I.2d) contains the view which is the target of Philoponus' attack in *Contra Proclum* XI.4: the lack of magnitude of prime matter allows for the reception of a different volume without additions being made, contrary to the case of growth properly speaking. The objection that growth is always preceded by generation apparently does not alter the point: in all instances the process of growth starts with a definite quantity. It is obvious that this reply does not envisage the question how to explain the fixed ratios between food, bile and blood. Nor does it address the related issue whether magnitude is provided by matter or form.[26]

Thirdly, the contrast between unqualified body in I.1c and quantified body in I.2d is most interesting. Unqualified body here enters the scene as Philoponus' interpretation of Aristotle's 'imperceptible body'. Indeed, for a Neoplatonist who is familiar with this level just above prime matter, 'imperceptible body' is easily glossed as 'body which

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[24] Philop. *in GC* 72.26-77.5. According to Philop. *in GC* 77.8-23 Alexander construed the argument differently: the candidates for a separate nature are ruled out because that which comes to be must occupy space (320 b 4) which none of them does; for the same reason only II remains. It is noteworthy that Alexander took imperceptible body as mathematical body, which is not in a (natural) place because it exists in thought only (77.14-15). Apparently he did not envisage the candidacy of the three-dimensional, which fits the chronology of the development of this notion that emerged from Chapter 2. Alexander's interpretation is probably also followed at *in GC* 329 a 29, 211.10-212.2. On the modern interpretations of 'imperceptible body' see Williams (1982) 104: 'this phrase seems to be intended as epexegetic of void', after Joachim (1922) 115.

[25] See further below, p. 143.

[26] This is the issue that divides Plotinus and Simplicius from Philoponus, see Ch. 2, p. 116.

has no visible qualities', i.e. unqualified body. However, this level is rejected as a possible candidate for the matter of growth because three-dimensional extension implies having a place, which implies definite size because something must be of the same size as its place.[27] Hence, we may infer that unqualified body is not supposed to have definite size. In this respect it differs from 'quantified body' in I.2d which is accepted as the matter of growth. In other words, the distinction between three-dimensional extension with and without determinate size, which we encountered in Simplicius and in Philoponus' *Contra Proclum* XI.1 seems to surface here already. We may conclude that the distinction is not new in the *Contra Proclum.* Insofar as unqualified body in *in GC* I.5 is indefinite as to size, it corresponds to Philoponus' presentation of unqualified body in *Contra Proclum* XI.4. As such the notion of unqualified body in *in GC* I.5 already implies part of the solution to the objection which is the topic of *Contra Proclum* XI.4.

Philoponus' interpretation of the notion of unqualified body in *in GC* I.5 also explains why he included the distinction between three-dimensional extension with and without definite size in his description of the received opinion concerning matter in *Contra Proclum* XI.1. Insofar as he had already made this distinction himself in the *in GC*, it belongs to the traditional interpretation.[28]

Moreover, in I.1c Philoponus makes it clear that there is no such thing as a separate imperceptible body, because all bodies have a *specific* place which is determined by the qualities they have. The four elements exhaust all possible places, so imperceptible body is excluded as a candidate. In other words, unqualified body is excluded because it can only be regarded as a separate level in theory, whereas it never actually exists without further qualitative determination. Since section I.1 discusses the possibility of a *separately existing* matter of growth, unqualified body has to be rejected.

Philoponus signals on more than one occasion that although the discussion in *GC* I.5 is concerned with growth, Aristotle uses examples from generation.[29] He informs us that for this reason Alexander took 320 b 17-18 as referring to prime matter: 'matter is that which has points and lines as its limits and cannot possibly ever exist without

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[27] Cf. Arist. *Phys.* IV.1 209 a 28-29, IV.4 210 b 34-211 a 2.
[28] Cf. Chapter 2 p. 127-128.
[29] Cf. *in GC* 78.7-17; 80.24-81.2; 82.7-12.

qualities and without form' (*in GC* 82.6-32).[30] On this interpretation Aristotle would make the familiar point that, although matter in itself is not an actual body nor limited by points and lines but formless and incorporeal, matter never exists without property and form (μορφή being assimilated to εἶδος) and that it is a body in actuality only from this point of view.

Philoponus continues (82.32-83.17) that if this is wrong because the chapter is concerned with growth, 320 b 16 'the matter of body' should be understood as referring to a *growing* body, which is an actual body too inasmuch as it is three-dimensional and never exists without physical form and accident either. In spite of a lacuna in the text, it seems that he interprets 320 b 22-23 'since there is *also* a matter out of which corporeal substance comes to be' as a transition to prime matter, which would prove that Aristotle had not been discussing prime matter up to that point. It is not clear whether Philoponus regards this argument as decisive, though he emphasizes it against Alexander's interpretation at 84.19-26.[31] Nevertheless, in other passages Philoponus treats Alexander's suggestion as equally possible with his own and emphasizes that the text makes sense both ways, whether it is concerned with the matter of generation or with the matter of growth (*in GC* 78.25-79.9).

At the same time Philoponus provides an interesting interpretation of Aristotle's statements in 320 b 12-15 and 320 b 22-25. In the first passage Aristotle states that 'in all instances[32] the matter is inseparable and differs not in number but in account'—differs, so it seems,[33] from that from which it is inseparable. Philoponus explains:

T23 1. So if he is now discussing the matter of what is growing, he has said that it is 'inseparable' instead of 'not separated' from that which it is in,[34] but that it is something of [that which it is in][35] and has

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[30] No doubt he was thinking of *Metaph.* VII.3 where matter is described in a similar way. On the significance of *Metaph.* VII.3 see Chapter 2 p. 60ff.

[31] This passage contains a perfectly traditional account of formless incorporeal prime matter.

[32] *GC* 320 b 12 πᾶσιν, explained by Philoponus as 'in every way *sc.* better' or 'better for everyone to say', 78.24-25. I agree with the *RevOT* here; cf. Joachim (1922) 117, Williams (1982) 16.

[33] Cf. Joachim *l.c.*, Williams *o.c.* 105-107.

[34] Arist. *GC* 320 b 13 ἀχώριστον. Earlier Aristotle had described the other half of the division as εἰ μὲν κεχωρισμένον (320 b 6) so on the principle of exhaustive division Philoponus expects εἰ μὴ κεχωρισμένον but he finds ἀχώριστον.

come to be what that which it is in is said to be,[36] so that water is not said to contain matter of air,[37] but the water itself is matter of air. For it has been said that the matter of what is growing is not potentially body, but actually [body], and that, being in something, it is in such a way that it is part of that which it is in.[38]

2. If he is not discussing the matter of what is growing, but [the matter] of what is becoming, i.e. the first and formless [matter], in that case too the statement can be true: for [that matter] is inseparable too because it is incapable of being separated from that which it is in.

3. Also the following statements match (σύμφωνα) according to this interpretation (ἔννοια). He says that 'it is one and the same in number, though not one in account'.[39] For incorporeal matter is one and the same in number with the water, though not the same in account: for it to be matter is one thing, to be water another. And the same account is applicable to the matter of what is growing: [for it to be] water is one thing, to be matter for a plant another. (Philop. *in GC* 320 b 12, 78.25-79.9)[40]

This exegesis mirrors Philoponus' interpretation of *GC* 319 b 3 'that which underlies them (*sc.* the contraries), whatever its nature may be, is the same'. There too Philoponus explicitly speaks of changing the perspective[41] on one and the same element, but in order to distinguish prime matter from proximate matter. Because the passage provides an interesting construction of these two kinds of matter, I quote it in full:

T24 Matter, he says, inasmuch as it is matter and is whatever it is according to its own nature, is the same for everything it underlies. For by saying 'whatever it is' Aristotle <meant> the substrate *** for <with

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[35] Philop. *in GC* 78.27 ἐκείνου τι οὖσαν; cf. Arist. *GC* 320 b 7 ὥστε μὴ ἐκείνου καθ' αὑτὸ ἢ κατὰ συμβεβηκός τι εἶναι which is the description of the opposite branch of the division.

[36] This is necessary because *qua* matter it has no designations after which it can be named.

[37] Arist. *GC* 320 b 9-10 διὰ τὸ ὥσπερ ἐν ἀγγείῳ τῷ ὕδατι ἐνεῖναι τὴν ὕλην αὐτοῦ (*sc.* τοῦ ἀέρος) as a description of the opposite branch of the division.

[38] Cf. Philop. *in GC* 74.9-13 (see section I.2b in the summary above) which is Philoponus' paraphrase of Aristotle's ἐκείνου καθ' αὑτὸ ἢ κατὰ συμβεβηκός τι εἶναι (320 b 7-8). Cf. *Contra Proclum* XI.3 414.7-9: τὸ ἐν ὑπάρξει καὶ μέρος ἤδη τοῦ συνθέτου ἤγουν στοιχεῖον γενόμενον as definition of ἁπλῶς ὕλη καὶ ἁπλῶς σῶμα.

[39] Arist. *GC* 320 b 14-15.

[40] Cf. Philop. *in GC* 63.14-64.2, 80.35-81.2, 84.19-85.8.

[41] Note the use of θεωρεῖν 'consider' in the passage (Philop. *in GC* 63.20, 24) as well the ubiquitous κατά 'in virtue of' 'after'.

> regard to> its own nature, so to speak, there is one matter for all.[42] For insofar as it is matter it has a similar fitness (ἐπιτηδειότης) in relation to everything.[43] Since its being and existence (ὑπόστασις) is always together with some form, it is not the same matter for all with regard to the form and existence (ὕπαρξις).[44] [Matter] considered after the form is proximate matter, e.g. the matter underlying fire is air. [The matter] underlying air may happen to be actually water that way [*sc.* considered after its form], and [the matter] underlying water earth.[45] Earth and air then underlie fire and water, and these [*sc.* earth and air] are the same according to the account of matter, but different according to the form, when they are no longer considered as first matter but as proximate matter.[46] (Philop. *in GC* 319 b 3, 63.14-24)

This interpretation is remarkable for several reasons. In the first place, even though the notion of an incorporeal, formless matter occurs throughout, it does not seem to be the traditional concept of prime matter usually assumed to be present in the Greek commentators.[47] According to Philoponus prime matter is not something literally 'underlying' the elements, serving as a more primitive substrate, but it is *identical* to each of the elements *insofar as* each of the elements serves as matter for another element, i.e. as the starting-point of a substantial change in which it perishes *qua* (e.g.) water. Considered thus it makes no sense to call it water because as matter for air it is not-air, and should be called formless and even incorporeal.[48] The

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[42] Unfortunately the manuscript has a lacuna here. The additions suggested before and after the lacuna are mine. The qualification 'so to speak' is appropriate because the term 'nature' is usually associated with form.

[43] On fitness see section II p. 153ff.

[44] Note that ὑπόστασις and ὕπαρξις are not distinguished here; compare Taormina (1994) 115-123 who claims that in the *in DA* this terminological confusion is a consequence of the different philosophical frameworks that Philoponus is combining there. This matter deserves further investigation.

[45] Cf. Philop. *in Phys.* 171.6-172.24.

[46] Interestingly, in the following paragraph (*in GC* 63.24-64.2) Philoponus treats Aristotle's λόγος (translated 'account') as a Neoplatonic immanent logos, modelled on the Stoic σπερματικὸς λόγος. Matter is said to receive the form of earth or water in virtue of different λόγοι in this sense.

[47] It is not present in Simplicius either, see Sorabji *MSM* Ch. 1 and my Chapter 2, p. 121.

[48] The matter 'underlying' the elements is formless like matter at any level, because designating e.g. water as matter focuses on the absence of the form it is able to receive. It is incorporeal because the elements are the first 'simple' bodies which implies that their matter only receives corporeality when it receives the form of an element. Corporeality can be taken for granted at higher levels of the physical world, because in the end these higher levels are composites of the four elements.—

notion of prime matter designates a mode of being of (e.g.) water *as a whole*. Different accounts serve to distinguish different modes of being, all manifested by one and the same 'underlying' thing as a whole.[49]

Moreover, 'matter considered as proximate' is used as a phrase denoting matter after the form it actually has at the moment it is designated as matter in relation to another form. To say 'water' when talking about the matter of air means to denote the proximate matter of air. Hence it seems that the phrase 'proximate matter' is used to denote a positive description of prime matter, i.e. after the form it actually has.[50] We shall see below to what extent this interpretation matches the Neoplatonic approach of matter.[51]

The second remarkable point in the texts cited above is that they show how close formless matter and quantified matter actually are. On the same principle illustrated in the two texts above, Philoponus surmises elsewhere that the matters of generation, growth and qualitative change are one and the same in place, subject and number, while being different in account.[52] As Aristotle had pointed out (*GC* 320 b 25), these matters cannot differ in place and number or else properties would exist separately, i.e. in a different place, from substances. In all these cases the substrate is the same thing, and in its own right it is designated after its actual form as e.g. water. Water is both matter for

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However, it should be realized that calling prime matter incorporeal relegates the responsibility for corporeality to form. This is orthodox Platonism from Plotinus onwards, also found in Philop. *in GC* 65.22-66.9. There he emphasizes that the entire form (66.3 ἰδέα, note the Platonic terminology) of e.g. air is replaced by the form of water. So even if transparency is found in both, the two occurrences of transparency are numerically different (cf. Arist. *GC* 319 b 21-31). Philoponus' innovation of the notion of prime matter means that corporeality is inherent in matter, which is no longer formless *and* incorporeal but merely formless (in the same sense as above).

[49] Compare Philop. *in Phys.* 225.17-20, *in GC* 80.37-81.2. In support of this interpretation one may compare e.g. Arist. *Cael.* IV.5 312 a 30-b 2, *Phys.* IV.9 217 a 26-b 11.—For a different use of scope distinction see the interpretation of *GC* II.1 in Bemelmans (1995) 273-292.

[50] Cf. Philop. *in DA* 52.26-53.8.

[51] Cf. *in GC* 275.3-5: fire can be called 'potentially water' though not *qua* first and formless matter, since fire itself is characterized by form. In a similar way composites are not 'potentially the elements' in the sense prime matter is because they are themselves characterized by form and because they are self-subsistent, cf. *in GC* 334 b 18, 275.31-276.30 (for the mode of existence of the elements in composites, see below section II).

[52] See *in GC* 320 b 22, 84.31-85.8.

air (generation), and matter for the growth and nutrition of a plant (natural growth). Both these functions differ from its being water. This interpretation sheds interesting light on the notions of 'inseparability' and 'being a part of' which are used by Philoponus to describe Aristotle's point of view. Apparently these notions can be employed to describe material identity together with formal difference. 'Being a part of' here means being fully integrated into the whole and therefore 'inseparable'. Hence it denotes a way of being rather than a material part, which would not be one and the same in place with the whole.[53]

Though this interpretation of Aristotle helps explain the convergence between the two kinds of matter on Philoponus' final view in the *Contra Proclum*, it is not sufficient. We still have to see how Philoponus came to think that three-dimensionality is relevant to being prime matter as well as to being matter for growth.

2 Growth, generation, and void

To answer the question raised at the end of the previous section we have to take a few steps back and assess the way Philoponus deals with Aristotle's chapter on growth in his commentary and in the *Contra Proclum.* For Philoponus the entire problem is determined by its relation to void, space and non-being. Indeed, to a large extent these issues also constituted the background for Aristotle's discussions, even beyond the familiar fact that his theory of matter and form was designed to exclude generation out of (as well as corruption into) unqualified non-being.[54] For even so, problematic entities like void and potential body could threaten his world view.

In Aristotle's discussion of growth and diminution the void plays an important role: something which is growing is occupying an increasing amount of space. If that space was already available before growth began, it would have to be void—which, as *Phys.* IV.6-9 has shown, cannot possibly exist; but if it was occupied by another body it would seem that body would have to pervade body, which is equally impossible.[55] Again, how are we to conceive of the magnitude to which

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[53] Cf. Philop. *in Phys.* 7.25-8.17.

[54] See Arist. *Phys.* I.7. Aristotle refers to this theory in *GC* 320 b 18-21, which is aptly summarized by Philoponus in his *theoria* to *GC* I.3, *in GC* 43.29-44.25. For Aristotle's *horror vacui*, see e.g. Thorp (1990).

[55] Cf. Arist. *GC* 320 a 27-b 10. The converse obtains for diminution: something which shrinks leaves space unoccupied.

growth is said to pertain? If growth occurred out of something which is potentially body and magnitude but at the same time actually incorporeal and without magnitude, and if such a thing existed as a separate nature, one option would be that it is self-subsistent void (cf. I.1b above). It is to avoid these problems that the matter out of which growth takes place has to be inseparable from body, and that it can only differ in account, not in number, from the actual body and magnitude which it is in (320 a 27-b 14). That which is added in the process of growth cannot be incorporeal, or again it would not be able to account for the extra space needed to accommodate growth (322 a 8ff).[56]

Aristotle's account of generation of the elements encounters a similar problem.[57] Compound bodies are usually analysed into the elements, but since the elements are the first ('simple') bodies they can only be analysed into something incorporeal—at least, on the same kind of analysis. In that case the generation of the elements would take place out of something incorporeal and the same problem would come up again: the newly generated element would have to occupy a place, which could only have been present beforehand in the form of actual void.[58] This is the main argument Aristotle adduces to prove that the elements are generated *out of each other* (*Cael.* III.2 301 b 30-302 a 9, III.6 305 a 14-32).

But still the void is lurking: if the change of the elements out of each other entails a change of volume, each elemental change requires extra space or superfluous space will remain void. It seems that some kind of compensation is required in order to keep the bulk of the universe eternally the same: each change of air into water would have to be compensated by a change of the same amount of water into air somewhere else. Or rather, the potentiality of the matter of the elements to become larger or smaller will have to account for all change of volume without addition or removal of material (*Phys.* IV.9). Thus in Aristotle

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[56] For Philoponus the void is subject of discussion also because he is aware of different manuscript readings: in 320 b 25, 321 a 6 some mss. have κενόν ('void') where others have κοινόν ('common'). Therefore he discusses the appropriateness of either term in these passages, and manages to find a solution for both readings, cf. 85.24-86.6, 86.24-29, 89.29-90.4.

[57] Philoponus' introduction to his commentary *in GC* clearly shows the role of the void in several arguments concerning the elements, cf. 4.12-7.4.

[58] Again, the converse will be valid for corruption into something incorporeal without place, thus leaving empty space, i.e. an actual void.

the accounts of growth and the generation of the elements are pervaded by his *horror vacui*.[59]

Philoponus, on the contrary, has acquired some fame for his arguments against Aristotle's discussion of the void in *Phys.* IV.6-9. Even if his *Corollarium de inani* were written after the redaction of *in GC* it is obvious that the notion of void had his vivid interest at the time he was writing *in GC*. At *in GC* 180.25-29 Philoponus boldly envisages a void which is never filled with body, and since this thought experiment is entirely without contradiction he claims that Aristotle's argument at *GC* 326 b 15 (against the existence of void pores) is not cogent. Nevertheless, even the *Corollarium* maintains the tenet that void does not actually occur in nature. Nature's avoidance of void, or as Philoponus calls it: 'the force of the void', is useful for explaining some physical phenomena which are otherwise difficult to understand, such as the siphon.[60]

Philoponus explicitly notes the relation between the void, growth and Aristotle's assumption that nothing is generated from nothing (*ex nihilo nihil*) in his comments on *GC* 320 b 25:

T25 1. One should know that the *reductio ad absurdum* introducing the void is true from the premise (ὡς δεδομένου) that nothing which perishes passes into complete non-being (τὸ μηδαμῇ μηδαμῶς ὄν).
2. If someone were to say that [things] perish into non-being and are generated out of non-being, it would no longer follow from this hypothesis that there is an actual void. For the space (τόπος) which something which perishes leaves behind is filled by that which is generated.
3. In the same way in the case of growth there would be no room for the void [in the argument] any more, if someone were to say not only that growth occurs from potential magnitude, but also that something diminishing would change into potential magnitude. So the argument

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[59] From Alex. *Mixt.* 219.22-220.23 it is clear that the Stoic concept of fusion (κρᾶσις) gave rise to a similar problem: where does the space come from which receives the result of the fusion? Alexander raises several objections against the obvious answer that it is the same space that was taken up by the ingredients of the fusion beforehand.

[60] Cf. Philop. *in Phys.* 569.18-573.21 (*Corollarium de inani*) with Furley (1991) *ad loc.* 30-35 who also notes *Contra Aristotelem* fr. 82 W., *ap.* Simpl. *in Cael.* 158.17. See p. 159-160 for the 'force of the void' in a traditional experiment designed to proof the existence of actual void, not mentioned by Furley *l.c.* Incidentally, in its treatment of void *in GC* 180.25-29 is entirely compatible with the *Corollarium de inani*, which, on the current early dating of the *in GC*, should tell against a late date for the *Corollarium*.

> proceeds in this way only because it is taken for granted (ὡς ὡμολογημένου) that that which diminishes does not change into potential magnitude.[61] (Philop. *in GC* 320 b 25, 86.7-16)

Indeed Aristotle hints at this general background in the text under discussion when he stipulates that the matter of what is generated is already part of some kind of body (320 b 22-23). The underlying premiss that nothing is generated from non-being nor perishes into non-being, is something the reader of Aristotle should be aware of in order to fully understand Aristotle's argument, and therefore our commentator provides it. Hence it is not necessary, I believe, to see this passage as an indication of Philoponus' Christian belief in creation out of nothing. It is noteworthy however that generation out of unqualified non-being is presented as a way to dodge the repeating threat of self-subsistent void. For though Philoponus does not push that solution here, we may well surmise that it was open to him—though not to Aristotle. Nevertheless, this solution creates a problem of its own, because for all we know generation out of non-being will have to be balanced by a simultaneous corruption into non-being in order to avoid a hole of non-being in the universe.

From this text it is also clear that Philoponus constructs an analogy between the problem of void in the case of generation and the problem of void in the case of growth. Aristotle's explanation of either process rules out potential body. Therefore, Philoponus is not prepared to accept Aristotle's claim that growth out of a potential magnitude is impossible merely *because* that would rather resemble the generation of body which is not the topic of *GC* I.5. Aristotle's *a priori* distinction between the matter of growth and the matter of generation is reflected in Philoponus' commentary several times.[62] But on one occasion (*in GC* 87.5-30), Philoponus points out that from the commonly acknowledged fact that growth is the increase of an already existing magnitude it does not follow that growth may not take place out of potential body, though he admits that Aristotle produced some cogent arguments against this elsewhere.[63] However, Aristotle solved the case of genera-

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[61] This interpretation of Aristotle is also found at 74.25-75.2.

[62] Philop. *in GC* 76.24-77.5; 79.22-24; 84.24-26; 86.26-30.

[63] The most important one for him being the fact that points do not add anything to size. Cf. Arist. *GC* 316 a 30-35; for a similar argument concerning weight see *Cael.* 299 a 25-30, b 14-300 a 12.

tion by means of his distinction between potential body[64] and actual body, and we saw how on Philoponus' interpretation it is perfectly feasible to call water a potential body insofar as it is not (yet) air. Indeed, Philoponus notes, prime matter is even said to be potentially everything though it is always found together with a form in actuality. Therefore he concludes that Aristotle's rejection of the option that the matter of growth exists as prime matter in the composite, instead of as a part in the whole, is convincing 'only if one arbitrarily claims that such matter is not proper to growth but to generation'.[65] Earlier Philoponus had offered this distinction as two alternative interpretations of being 'in' something, at *in GC* 320 b 12, 79.20-26, and we have already encountered his use of the distinction in his initial *divisio* of the argument summarized above (I.2d). On both occasions he himself used the distinction he now calls arbitrary.

We may conclude that the similarity of the problems to be solved suggests the similarity of the solutions given. If generation can be said to take place out of potential body, growth can be said to take place out of potential magnitude. If, according to Aristotle (*GC* 320 b 33-34), this boils down to growth being generation of body, one might as well say that growth occurs out of potential body (*in GC* 87.20-22). On Philoponus' interpretation of both kinds of matter there is nothing strange about that, for instance if water serves two different purposes. Hence the distinction between the matter of growth and the matter of generation breaks down. However, in the initial *divisio* the distinction was used to explain change of volume in generation and growth respectively (see I.2d). Therefore its abolition leaves that problem unaccounted for. This problem will receive its final solution in XI.8 by means of the notion of the three-dimensional.

Philoponus' divergence from Aristotle surfaces again in his comments on 321 a 9-29. In this passage Aristotle emphatically denies that the change of water into air has anything to do with growth. For although Aristotle admits that it might be considered growth of some-

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[64] See *GC* 329 a 25-329 b 1, famous for its role in the discussion about prime matter (see esp. 329 a 33 τὸ δυνάμει σῶμα αἰσθητόν). Unfortunately, Philoponus' *theoria* to II.1 is lost, and the remaining commentary, esp. *in GC* 329 a 29, 211.10-212.2, is not very illuminating. We have to turn to the passages from Philoponus' commentary on *GC* I.4-5 that are discussed in the main text if we are to reconstruct his views.

[65] Philop. *in GC* 87.29-30: ... πλὴν εἰ τις ἀποκληρωτικῶς φῇ ὅτι ἡ τοιαύτη ὕλη οὐκ αὐξήσεώς ἐστιν ἴδιος ἀλλὰ γενέσεως.

thing common to both elements, e.g. body (!), the change of water into air does not qualify for being growth. For according to the received opinion of growth the growing thing persists, and it grows by the addition of something. If the change of water into air were growth, it would mean that the growing thing does not persist, and that growth is possible without addition. At *in GC* 91.15-92.5 Philoponus objects that the threat of self-subsistent void is common to growth and generation. In the case of growth empty space is needed because only potential body is added, not actual body which would bring along space of its own. In the case of generation empty space is needed because no additions are made at all, so there is no addition of space either. In other words, Philoponus' fine-tuning described above does not solve the problem of space, as we remarked earlier. In the next section we shall see how he dealt with this problem by means of natural expansion and contraction of three-dimensional extension.

We have already seen that the text of Aristotle's *GC* I.5 provides Philoponus with an occasion for introducing the three-dimensional, viz. as the interpretation of the phrase 'imperceptible body'.[66] Aristotle's tantalizing suggestion that body could be the common substrate of water and air (321 a 14-15) provides yet another occasion to discuss the three-dimensional. First Philoponus summarizes Aristotle's argument and concludes that only prime matter can underlie the generation and corruption of a particular body (*in GC* 94.10-30). Then he suggests that someone might say that not only prime matter but also the three-dimensional *qua* body persists during substantial change. However, just as in the *theoria* (I.2d), Philoponus rejects the possibility that the three-dimensional *qua* body is the matter of growth. He uses Aristotle's criteria and explains that in that case growth would not occur from the outside; again, in the change of water into air the three-dimensional would grow without the preservation of form.[67] Only on the quite irrational supposition of a self-subsistent three-dimensionality could one say that the three-dimensional grows. Moreover, Aristotle could not have had the three-dimensional in mind here because the three-dimensional is not the substrate that is characteristic of the

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[66] See above p. 141-142.

[67] However, one should object that even when the three-dimensional loses the form that inheres in it, it does not lose its essential form, i.e. the form of three-dimensionality. In Aristotle's account the persistence of the substrate of growth requires the persistence of the essential form.

change of water into air, but the substrate of all generation and all change (*in GC* 94.30-95.12).[68] We may conclude that in this text Philoponus still preserves the formal distinction between generation and growth and their respective matters, as he did in 79.6-9 (see T23 §3).

In short, Philoponus refuses to call the generation of air out of water an instance of growth, but at the same time he implies that the three-dimensional could be used to explain this example of generation, in line with the common role of three-dimensional extension in contemporary Neoplatonism, which we described in Chapter 2. However, the level of three-dimensional extension is not used to explain growth.

II FITNESS AND LATITUDE

As I see it, Philoponus' final solution to the problems discussed above cannot be properly understood without realizing the importance of the concepts of 'fitness' (ἐπιτηδειότης) and 'latitude' (πλάτος).[69] The following discussion is designed to show that fitness as a designation of first potentiality in a Neoplatonic context raised the question for a positive account of this fitness and hence of matter.

The literature on the topic of fitness tends to distinguish between the application of the term as a piece of scholarly jargon equivalent to Aristotle's notion of potentiality on the one hand, and specifically Neoplatonic applications of it on the other. The term is used in relation to theurgy and as part of the dogma that participation takes place in

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[68] Note that on this presentation three-dimensionality, i.e. corporeality, is not part of the form of the elements. The argument also draws on the Neoplatonic tenet that unqualified body remains constant in *every* natural change, see Chapter 2 p. 91ff.

[69] These concepts have been discussed by Sambursky (1963) 73-74, 76-68, Todd (1972, 1980) and Tsouyopoulos (1969); see also Wolff (1971) Ch. 3, Böhm 282-299, 375-379, and Sylla (1974) esp. 227 n. 10. My interpretation of Philoponus partly corrects these discussions and gives a different treatment of the concepts involved. I agree with Owen's comments on Sambursky (*l.c.* 97-98) that fitness is not to be regarded as a *sufficient* condition for actualization. It will become clear that I differ from Todd (1980) inasmuch as he states that Philoponus did not extend the notion of mixture with latitude to the elementary qualities in any way. Moreover Todd differentiates fitness as jargon for potentiality from especially Neoplatonic applications of the term. I think that its use in Philoponus has more to it than that, and that the Neoplatonist interpretation of Aristotle that we find with him combines the two senses of fitness. Wolff (1971) did not take into account *in GC* and therefore does not explain *why* Philoponus came to think the tentative solution he provides in *in Phys.* a convincing one at the time he was writing *Contra Proclum* XI.8.

accordance with the capacity of the recipient.[70] Though it is important to distinguish these applications of the term in Neoplatonic (meta-) physics, a different approach seems more helpful to explain Philoponus' physics.

In Philoponus' commentaries 'fitness' mostly designates not just any potentiality, but more specifically first potentiality, from which its application to both proximate matter and prime matter derives.[71] No doubt Aristotle would think it inappropriate to designate first potentiality positively because the notion of first potentiality is concerned with the lack of a specific form, whereas second potentiality presupposes an earlier actualization in view of which this disposition can also be called a disposition (ἕξις).

How did Philoponus (and his contemporaries) employ the term 'fitness' (ἐπιτηδειότης)? Tsouyopoulos[72] has drawn attention to the significance of the Neoplatonic doctrine of participation, esp. the important tenet that the divine Forms are participated in accordance with the capacity of the participant. In Proclus, generation and corruption in the sublunary realm are entirely due to this capacity, since immaterial causes are eternally in actuality and productive (*ET* prop. 140).[73] The

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[70] Dodds 344-345: 1. inherent capacity for acting or being acted upon in a specific way, going back on Philo of Megara and introduced as a complement to Aristotle's theory of potentiality or as an alternative to it (Philop. *in DA* 107.26-109.6); 2. inherent affinity of one substance for another, a specialized application of (1) within the framework of the doctrine of occult sympathies; 3. inherent or induced capacity for the reception of a divine influence, an even more specialized meaning in a theurgic context, though Dodds recognizes the relevance of the general notion of a 'state of grace'. Todd (1972) traces the development of the first sense and argues that especially in Philoponus ἐπιτηδειότης is merely a piece of commentator jargon for Aristotle's potentiality without content of its own. Tsouyopoulos (1969) elucidates the connection of ἐπιτηδειότης with the Neoplatonic dogma of the reception of a (divine) form according to the capacity of the recipient.

[71] Cf. *in GC* 63.17 (see T24 above), 271.17; *in Phys.* 52.2-4; *Contra Proclum* III.7 54.18-20; cf. Ps.-Philop. *in DA* 305.35.—Arist. *DA* II.5 417 a 21-418 a 6 is the basic account of first and second potentiality.

[72] Tsouyopoulos (1969) 26-28; Todd (1980) 163 n. 53.

[73] We already saw how the example of house-building was adapted to suit this picture: builders merely prepare the material, until the form enters immediately; cf. Chapter 1 p. 9ff. A similar account is found in Philop. *in GC* 283.27-284.7: the efficient cause only provides the fitness, and as soon as the fitness is realized, the form enters automatically. In the *Contra Proclum* Philoponus opposes this interpretation, see Chapter 6 p. 281-2.—Procl. *ET* prop. 140 can be regarded as the solution of Aristotle's criticism of Plato in *GC* 335 b 18-20: if the forms are the causes of generation and corruption, and if both forms and participants are eternally present, why do they not generate eternally but only now and then? Proclus accepts eternity,

capacity of the recipient is constituted by higher causes which provide the substrates (ὑποκείμενα) that are capable of receiving the influence from lower causes because the potency of higher causes extends further down the hierarchy (*ET* prop. 71-72, 79-80). These substrates are of course only logically prior to the forms they receive. Fitness in this sense is always a determinate nature—and therefore, one might add, no longer equivalent to Aristotle's first potentiality. I would suggest that the Neoplatonic interpretation of Aristotle tended to blend these two notions of fitness. Hence Aristotle's first potentiality acquires the possibility of being described in positive terms; as a consequence, matter, the general place-holder for anything *qua* first potentiality, may receive a positive designation as well.

Confining our discussion to Philoponus, we see that he analyses proximate matter above the level of the elements in terms of mixtures with a certain latitude of form (*in GC* 145.26-147.15). The function of this latitude (πλάτος) is twofold. First it explains the change of e.g. the colour and taste of a mixture. In an important text, translated below,[74] Philoponus makes clear that the common subject for such qualities or forms is not the immediately underlying mixture, (which is different for e.g. white and black) nor the matter which is common to all (three-dimensionality!), but something in between, which remains unaffected because the change of colour occurs within its range (κράσεως πλάτος). Only when the changes in any of its ingredient qualities transcend the limits of its range, does the mixture itself change. Thus the latitude of the mixture is derived from the latitude of each of its ingredient qualities.

The latitude of the qualities, formulated in terms of intension and remission (ἐπίτασις, ἄνεσις),[75] explains why honey, when heated up

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but introduces the impediments of unfitness to account for temporal generation and corruption.

[74] See T26, *in GC* 146.12-21.

[75] These terms seem to be commentator jargon for 'the more and the less' as used throughout Aristotle's *Categories* as one of the criteria to distinguish the categories one from the other. Simpl. *in Cat.* 283.29-291.18, discussing the more and the less in the category of quality, provides an intriguing survey of four different views of intension and remission of qualities, which deserves closer study. We learn that on the view of 'Plotinus and other Platonists', which seems to be the one Philoponus endorses, intension and remission is to be explained from the inherent indefiniteness of matter which affects everything in it. See also 286.27, 290.19-20: latitude of participation is due to the (lack of) fitness on the part of the recipient. Cf. Böhm

to a certain point, changes its colour but not (yet) its sweetness.[76] In that case the limit of the latitude for a particular colour is transcended, and therefore it perishes. The latitude of sweetness has not yet reached its critical point because the ranges of the particular colour and sweetness do not coincide (*in GC* 145.26-147.17). In the case of the elements the latitude of forms also finds an application. The change of water into air and finally into fire under the influence of fire can be described as a journey through the latitude of the form of hotness (*in GC* 148.21ff). First the water is merely heated, but when its critical limit is reached it turns into air, and finally it may turn into fire. Elsewhere the latitude of hotness within the range of fire is divided so as to account for different kinds of fire (*in GC* 228.28-229.4).[77]

Quantity also contributes to the fitness of a mixture. When the quantity of each ingredient is within a certain range, the ingredients interact, and their previous qualities are 'tempered' to make up a mixture with different characteristics. Since the ingredients may be taken out of the mixture again, they remain present potentially (Arist. *GC* I.10 327 b 23-33).[78] However, according to Philoponus this is neither first potentiality (fitness) nor second potentiality (disposition) but an intermediate kind of reduced disposition, as in a drunk geometer who is trying to work. This example derives from Aristotle's *Phys.* VII.3 247 b 13-14 and had a history of its own.[79] The same potentiality is also found in the explanation of the mode of existence of the elements in composites (Arist. *GC* II.7 334 b 18-31). Philoponus, in his commentary on the latter text, refers to *Phys.* VII.3 in explaining this third type of potentiality (*in GC* 271.15).

However, when the quantities of the ingredients transcend certain limits interaction is replaced by action and passion, and the dominating quality or form assimilates the other. For example, the form of wine in

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(1967) 375-376, who perhaps too easily attributes this passage in Simplicius to this commentator's knowledge of Philoponus' *in GC*.

[76] Cf. Sambursky (1963) 76-78 who regards this passage as the first occurrence of the notion of 'functional dependence of one set of variable quantities on another' and the 'only case on record in Antiquity of the quantitative treatment of a functional relationship'. See also Böhm (1967) 453 n. 127.

[77] Cf. *in GC* 99.32-100.13.

[78] Compare Alex. *Mixt.* 231.12-232.31. Cf. Sorabji *MSM* 68.

[79] I intend to describe this history on another occasion. Philoponus' terminology of κεκολασμέναι ποιότητες had a long history in Arabic and medieval discussions of mixture as *qualitates castigatae*. For clear formulations of this idea cf. Philop. *in GC* 271.2-24, 276.33-277.4, 277.13-19.

a drop of wine cannot resist the power of an ocean of water and is assimilated (*in GC* 198.16-30). This principle also regulates growth: if the digestive power cannot handle the quantity of food, it perishes rather than profits from the addition. A mixture therefore needs to be suitable in terms of quantity as well as quality to retain or to receive a form (*in GC* 102.16-29).

Fitness in terms of quantity is of course most relevant to our topic. Philoponus connects this requirement with Aristotle's statements in *Phys.* 187 b 13-21 about a fixed latitude of size for the form of anhomoiomerous bodies and natural substances. This passage gave rise to the famous notion of *minima naturalia*, versions of which are discussed by Alexander, Themistius, Simplicius, and Philoponus.[80] For Philoponus it is very important that forms need a certain quantity before they can be realized. He uses this idea to play down the priority of substance as form over quantity (*in Phys.* 578.15-26) as well as in connection with mixture (*in GC* 198.16-19) and monstrous births (*in DA* 14.5-6). As Todd remarks, Philoponus seems to be more interested in mixture as a problem of Neoplatonist metaphysics of matter and form than in the traditional problems of mixture. For instance, the quantification of qualities in a mixture or the explanation of the mode of existence of ingredients in terms of intension and remission do not get much attention.[81] We have seen that quantitative conditions also constitute the backbone of Philoponus' criticism of the notion of prime matter in XI.8.[82]

The fitness of prime matter was traditionally based on its formlessness and lack of magnitude which made it suitable to receive all forms and magnitudes. These characteristics derive from the *Timaeus*, where Plato argues that in order to be perfect, the receptacle must be entirely formless and completely unaffected by the forms that enter it.[83] Nevertheless, the Neoplatonic application of the notion of fitness to Aristotle's first potentiality contradicts this Platonic doctrine. In Chapter 2 it has already been shown that at the time of Philoponus three-

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[80] Alex. ap. Simpl. *in Phys.* 169.5-24; Them. *in Phys.* 14.31-15.9, 15.32-16.1; Simpl. *in Phys.* 167.12-17; Philop. *in Phys.* 97.24-98.2; 98.21-23; 103.20-30.

[81] See Todd (1980) 163, 164, 167. Nevertheless, Todd mentions one instance of quantification, *in GC* 170.22-28; cf. the idea of 'tempered' qualities as a way of designating their mode of existence, see n. 79 above.

[82] See esp. *Contra Proclum* XI.8 431.2-433.3, containing a reference to the *Physics*.

[83] *Tim.* 50 d 4-51 b 2, containing the examples of gold and perfume base.

dimensionality had acquired a position between the elements and prime matter. Proclus explicitly mentions body *qua* body as a substrate with only the slightest fitness for participating in the incorporeal (*ET* prop. 80). But of course below unqualified body Proclus still retains prime matter with its traditional kind of fitness in terms of receptivity (*ET* prop. 72, 68.24-29).

In *in GC* 146.9-21 Philoponus clearly connects the notion of mixture as a suitable substrate for the change of contraries, with three-dimensionality as the common matter of the elements:

T26 One may raise a problem concerning these [i.e. contraries and a common matter as conditions for action and being acted on]: if contraries that also have a common first matter act and are acted on, why does the white in a horse not act on the black in ebony, and in general every black act on every white? I say, then, because they do not have the same matter (οὐδὲ ὁμόυλα) in the proper sense of the word.[84] For one should not take the most proximate matter of the changing entities nor the very first: for in the case of the simple elements the three-dimensional is their common matter, whereas in the case of the compounds one should not take this common matter nor the proximate matter (τὴν ἐσχάτην), but one in between. Let me give an example. There is a certain latitude of mixture, on which the flesh of man comes into being: within this latitude the flesh may sometimes turn white and sometimes black, when some qualities are intended or remitted. This latitude of the mixture of flesh I call the common matter of the contraries that change into each other in the flesh of man. It is the same with everything. (Philop. *in GC* 146.9-21)

Since 'common matter' is a rather general description, further specification is needed. For qualities of e.g. flesh the common matter in the required sense is a certain 'latitude of mixture'. The text translated above warrants the suspicion that in the case of the elements the three-dimensional might perhaps serve as the analogue of the 'latitude of mixture'. And since the flesh changes by intension or remission of qualities within its latitude, we may speculate that the elements are changed by 'intension and remission' of the three dimensions. Indeed, in some passages in *in GC* we find the changes of the elements explained by means of three-dimensionality.

Each element has a certain latitude in terms of three-dimensional extension. This feature is marshalled by Philoponus in order to explain

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[84] Cf. the short definition of mixture as 'the effect of things that have the same matter, on each other' ἡ τῶν ὁμοΰλων εἰς ἄλληλα ποίησις (*in GC* 197.15-16).

an experiment used to prove the existence of the void by e.g. Hero of Alexandria. Hero had argued for the existence of self-subsistent void as follows (*Pneum.* Praef. 250-264): if one sucks the air out of a bronze sphere without replacing the air with something else, it is clear that inside the sphere a large amount of void (μεγάλη ἄθροισις κενοῦ) will be present. Anticipating an obvious objection, Hero remarks that it is impossible that the remaining particles of air (σώματα τοῦ ἀέρος) could have grown without any additions being made. If the large amount of void were not there, the particles could have expanded only by rarefaction which implies the creation of void interstices. The opponents of the void however could not accept either type of void, and hence they would have to leave the experiment unexplained. Hero was prepared to accept the existence of void interstices as well as separate void, even though according to him the latter could exist only by force, not by nature.

Philoponus, on the contrary, explains the experiment by the expansion of the remaining air, for he takes for granted that an actual void cannot occur in nature (*in GC* 93.22-27).[85] This insight also provides a more plausible explanation for the problem of the extra space required by growth and the generation of a more voluminous element, which was raised in the previous section. According to Philoponus Aristotle would have to accept a world-wide compensation (ἀνταπόδοσις), with instantaneous movements of whole masses of air over long distances, to account for this fact without the introduction of void or one body pervading the other, and without the universe bulging.[86] For each time some water turns into air at point A, immediately the same amount of air would have to turn into water at some point B and the whole mass of air between A and B would have to shift so as to create the extra space at A where it is required. According to Philoponus this is absurd, if only because by definition movement takes time. The theory of expansion and contraction of the elements provides a much easier solution. Somewhere near point A some water or air will contract in order to make room, without necessarily changing into another element (*in GC* 93.10-13).[87]

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[85] See above, p. 149.

[86] Cf. Arist. *Phys.* 216 b 25-26 (a suggestion of the Pythagorean Xythos). For compensation cf. Philop. *in Phys.* 626.14-28 (*ad* 214 a 26, paraphrasing Aristotle), 671.10-672.17 (*ad* 216 b 26).

[87] This is a different solution from Aristotle's who apparently thinks that by pointing to the potentiality of the same amount of matter to occupy more or less

In this way, Philoponus continues, Aristotle explained the summer rains in Ethiopia,[88] viz. by the compression of the winds against the mountains to such a degree that the air changes into water. Because of the heat in the summer Philoponus considers it impossible that coldness is responsible for the generation of water. A similar phenomenon can be seen in the baths, where the hot air rising to the ceiling cannot get out and turns into water because it is compressed beyond its critical limit (*in GC* 93.13-22).[89]

It is interesting to note that Hero provides a corresponding experiment, i.e. blowing an extra amount of air into a bronze sphere. Because the sphere accepts the extra air although it contained a natural amount of air already, Hero concludes that the air contained void interstices which vanish under pressure. Hence Philoponus' theory of expansion and compression neutralizes two experiments that were believed to prove the actual existence of the void, i.e. either as void interstices or as a continuous void. This corresponds with Philoponus' position in the *Corollarium de inani* where actual void is rejected, even void produced by force. In the previous section we saw that for Philoponus change of volume in the case of growth and generation was part of the problem of void. Now we see how arguments related to his view of the void are employed to explain change of volume.

These examples imply the distinction between a certain natural amount of an element and the volume of the place it exists in or is forced to exist in. Nonetheless Philoponus never formulates anything approaching the concept of mass (specific weight times volume), as has been suggested.[90] The main impediment lies in the fact that he has no other way to assess this amount than in terms of volume.[91] Therefore the only constant that emerges from Philoponus' physics is the *specific volume* of e.g. an element in its natural state (i.e. not compressed or expanded by force), which can be measured against any

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space, he can avoid both the generation of void and compensation theory, *Phys.* IV.9 217 a 10-b 11.

[88] Cf. Arist. *Meteor.* 348 b 36-349 a 9. However, Aristotle does not refer to compression. Perhaps Philoponus has in mind the *Liber de Nilo* fr. 248 Rose[3]. I owe this and the following footnote to Robert Sharples.

[89] Olymp. *in Meteor.* 80.30-81.1 attributes a similar argument to Theophrastus (fr. 211B FHSG), and rightly points out that Theophrastus is not in agreement with Aristotle here.

[90] See e.g. Wolff (1971) 138-148.

[91] Cf. Thorp (1990) 162 who claims the same for Aristotle.

given volume. It can also be used to explain the fixed ratios between water and the air that is generated out of it, as we shall see.

It is time to return to Philoponus' discussion of growth in *Contra Proclum* XI.8. There the principle of *minima naturalia* is explicitly applied to the elements (*Contra Proclum* 431.12-16): water perishes into air when it is divided too far. This means that the underlying matter of the elements must possess a certain predetermined fitness in terms of quantity in order to explain the fixed ratios between the amount of water and the amount of air into which the water changes (433.3-22). This determination is provided by the three-dimensional which does not exist without definite measurements (433.24-434.1, §5).[92]

The fixed ratios themselves cannot be accounted for by reference to the forms of either water or air, since the one is replaced by the other during the process.[93] Therefore it is magnitude or three-dimensionality itself that is by nature fit to be compressed and expanded, though within a certain latitude. Philoponus emphasizes that the indeterminacy of three-dimensionality does not entail that it can expand or contract indefinitely. The limits of its latitude are provided by the actual size of the universe and the actual contraction rate of the element earth. Each smaller part of the entire three-dimensional expanse[94] is capable of being intended or remitted between proportional limits. This latitude together with the quantitative requirements of forms explain every increase and decrease of volume (434.9-435.2).

As soon as this position is reached, the matter of generation and the matter of growth appear to have a lot in common: in both cases the fitness of matter is based on three-dimensional extension and specific size. In the case of generation & corruption the specific size of the three-dimensional determines which forms can exist; moreover, the limits of the latitude of size that is inherent in three-dimensional extension explain the fixed ratio between the amount of water and the

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[92] Here Philoponus qualifies his earlier statement that indeterminate three-dimensionality is to be distinguished from three-dimensionality in existence, i.e. with definite measurements. It is wrong to take indeterminate extension as 'intensive Größe' and determinate extension as 'extensive Größe' and to associate these terms with Aegidius' *duplex quantitas*, as Wolff (1971) 146-147 does.

[93] Contrast Plot. *Enn.* IV.7 [2] 5.28-31.

[94] This is not a somehow independent Euclidean space, but the three-dimensional extension that is used in constituting the *plenum* of the physical universe as its matter.

amount of air that is generated out of it, as well as the division that yields *minima naturalia*. In the case of growth and diminution the quantitative latitude of the three-dimensional allows for the preservation of form; at the same time it explains why an actual void need not occur in nature without any kind of compensation theory. Besides, Philoponus treats growth & diminution and generation & corruption as analogous insofar as no change from the incorporeal to the corporeal or vice versa is necessary to explain these phenomena.[95]

We may conclude that the matter of generation and the matter of growth both receive a positive description which explains how they can perform their function: they are both three-dimensional. According to Philoponus' interpretation of Aristotle these two kinds of matter were different modes of being of one and the same entity, and they are both identical in number, place and substrate. From the point of view of e.g. water the fitness which accounts for its functioning as matter of the generation of air, as well as the fitness which accounts for its functioning as matter for the growth of a plant, resides in its having a particular three-dimensional extension. Because three-dimensionality is an inseparable part,[96] it qualifies for being the matter of growth according to one of Aristotle's criteria.

Contrary to Aristotle, Philoponus retains the Platonic notion of an unaffected substrate which survives substantial change. Contrary to his predecessors, Philoponus identifies the level of the three-dimensional as the remaining substrate. In other words Philoponus does not reject the traditional function of prime matter, but only its traditional representative. He needs three-dimensional extension *with* definite measurements to account for generation and growth, but he still preserves a theoretical level of three-dimensional extension *without* definite measurements to ward off the claim that his matter changes substantially.[97]

Perhaps even more important is the conclusion that this reappraisal of prime matter seems to be entirely motivated by dissatisfaction with Aristotle's physics as well as with the traditional interpretation of Aristotle. Neoplatonic metaphysics also provides the tools for this reap-

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[95] Of course the limits of the latitude of the three-dimensional are to be clearly distinguished from its potentially infinite divisibility. Cf. *Contra Proclum* XI.8 434.25-28.

[96] Cf. *Contra Proclum* XI.3 414.8-9.

[97] Cf. *Contra Proclum* XI.4 415.17-418.10.

praisal. There is no need to have recourse to Philoponus' Christian world view to explain why an indeterminate prime matter is no longer acceptable.

It even seems justified to adduce Plotinus' treatise on matter as a source of inspiration in this case too. We have already seen that Plotinus was inclined to associate extension and definite size.[98] The logical precedence of extension over all other kinds of determination is also acknowledged by Plotinus, although he does emphasize that quantity and quality occur and change together:

T27 1. But matter accepts in extension what it receives, for this reason, that it is itself receptive of extension; in the same way animals and plants, along with their growth in size, have a development of quality corresponding to their increase in quantity, and if the quantity decreased the quality would decrease too.
2. But if, because in things like these a certain size is present beforehand underlying the shaping principle, [our opponent] demands it there too [*sc.* in the case of prime matter], the demand is incorrect; for in the case of plants and animals the matter is not matter without qualification (ἁπλῶς), but the matter of this particular thing; matter which is matter without qualification must receive size from something else too. So, then, that which is going to receive the form must not be a volume, but it must receive quality as well at the same time as it becomes a volume. (Plot. *Enn.* II.4 [12] 11.17-27; transl. after Armstrong [1966])

It is interesting that Plotinus confirms that 'a certain size is present beforehand underlying the shaping principle' (§1).[99] It is likely that he has the same Aristotelian texts in mind that inspired Philoponus to the development of the theories described above. Insofar as Philoponus admits that definite size does not belong to the notion of prime matter as such, he is in agreement with Plotinus, even if it is for entirely different reasons. For Philoponus would deny Plotinus' position (§2), viz. that definite size depends on form; on the contrary, form depends on size. Nevertheless, the use of the terms expansion and contraction in relation to the (apparent) change of size observed in matter is remarkably similar in terminology to Philoponus' development of matter's fitness.[100]

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[98] See Chapter 2 p. 128-129 concerning *Enn.* II.4 [12] 11 (T21).

[99] Cf. also *Enn.* II.4 [12] 12.1-3. Elsewhere Plotinus even seems to envisage a loss of form as a consequence of continued division, cf. *Enn.* VI.5 [23] 12.

[100] Note that Plotinus also speaks of the fitness of matter, i.e. for receiving volume, albeit with his characteristic qualification (ὡς ἐπιτηδειότητα), *Enn.* II.4 [12] 11.28

We have already noted that Plotinus suggests by way of *argumentum ad absurdum* that if matter possessed magnitude (μέγεθος), 'he who gives the forms' would not be free to determine the size of its products.[101] Now we can see that Philoponus does not feel the least hesitation in demanding that in the case of prime matter too the realization of forms depends on a pre-determined size. But from his point of view the Creator brings about the unity of form and matter at once, and therefore a Timaean struggle[102] does not arise. Hence we may conclude that Philoponus clearly parts with Plotinus insofar as he *does* transfer the analysis of proximate matter in nature to the understanding of prime matter, and attributes three-dimensional extension to matter, with definite size as its first differentia. We have already seen that Simplicius was to take the same route.

Finally, we may conclude that an important aspect of Philoponus' account of prime matter, viz. its relation to the growth and diminution involved in elemental change, is the outcome of a development of which the *in GC* shows an earlier stage. It is a development which arose out of dissatisfaction with Aristotle's account of growth, with Aristotle's distinction between the matters of growth and generation, and with Aristotle's treatment of void. To a large extent, Philoponus' opponents could have followed him: to them, too, three-dimensional extension is the proximate matter of the elements. However, Philoponus distinguishes himself from them when he concludes that the traditional prime matter is irrelevant in physical explanation and should therefore be abolished. Christianity, it seems, was not the motive for Philoponus' innovations, even though the result could be used to attack pagan thought.

(T21). Elsewhere, he asserts that 'even prime matter is not all adapted to every Form, but to the primary kinds [*sc.* the elements] and then others upon them', *Enn.* VI.5 [23] 11.36-38 (transl. Armstrong).

[101] *Enn.* II.4 [12] 8.14-19; see Chapter 2, p. 109, argument 3.

[102] At least on one interpretation of *Tim.* 53 b 5, the Demiurge only succeeds in overcoming chaotic matter 'as much as possible' (ἢ δυνατόν).

CHAPTER FOUR

SECOND OBJECTION: A CATEGORY MISTAKE

The second in the series of objections that Philoponus raises against his new theory of matter, concerns the doctrine of the categories.[1] This argument has been highlighted as the most serious objection to Philoponus' position,[2] because it relies on a category mistake.

The objection in *Contra Proclum* XI.5 is straightforward: if three-dimensionality belongs to the category of quantity and body[3] belongs to the category of substance, three-dimensionality in itself cannot be identified with body. In that case the form of three-dimensionality that characterizes body must have a substrate in order to exist. On closer inspection, then, body is a composite of incorporeal matter and the form of three-dimensionality. As a composite, body-as-such is not itself the simple substrate of everything that Philoponus claimed it to be (421.16-422.4). Philoponus' answer is equally straightforward: there is a difference between qualities and quantities which are accidental to substance, and qualities and quantities which complete a substance's essence. Three-dimensionality constitutes the essence of body-as-such, and it is therefore correct to rank it under the category of Substance (422.4-423.15).

Philoponus' answer consists of two parts. First he disposes of his opponents' view by means of a *reductio ad absurdum*. The premiss

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[1] Since Porphyry, the Neoplatonists had accepted the categories (with some corrections) as a tool to describe the sensible world; cf. Evangeliou (1988) 88-89, 181. Nevertheless, category theory was not considered applicable to the intelligible realm, where from Plotinus onwards Plato's five genera ruled as categories. For Plotinus' application of the five genera of Plato's *Sophist* to the intelligible realm, see *Enn.* VI.2 [43]. For an illuminating interpretation of the five genera, see De Rijk (1986) 71-214.

[2] Wildberg (1988) 215-216; contrast Sorabji *MSM* 13-14.

[3] I.e. physical body, for mathematical body features in the category of quantity, *Cat.* 4 b 24, 5 a 4-7, 23 (τοῦ στερεοῦ); cf. Ackrill (1963) 91. However, the discussion of place in *Cat.* 5 a 6-14 seems to use body in the physical sense, if we may already think of the physical notion of place which Aristotle was to discuss in *Phys.* IV.1-5—even though *Cat.* 5 a 6-14 seems to use the common sense concept of place as extended (see esp. 5 a 11 κατέχει); cf. Algra (1995) 123ff. Note however, that the two notions of body need not contradict each other for Aristotle: *Cael.* I.1 shows that the basic objects of physical science are defined as three-dimensional bodies.

that three-dimensionality is an accident leads to the unacceptable result that accidents are prior to the corporeal substance they constitute (422.4-423.13). For if three-dimensionality is an accident because it is a quantity, the qualities of the elements (hot, dry, cold, light, heavy) must also be accidents. In that case all corporeal substance consists of matter and the accidents as its elements.[4] However, elements are prior in nature to what they constitute. Applied to the case of body,[5] this would mean that accidents are prior in nature to all corporeal substance, and can exist apart from body. This is clearly incompatible with the notion of accident.[6] Hence it is absurd to classify three-dimensionality as a mere accident.

Subsequently, Philoponus provides his own alternative (423.13-424.11). He draws attention to the common distinction between accidental and essential qualities. Not every quality is an accident:[7] differentiae like 'rational' or 'biped', which are predicated of species and individuals in quality, are essential qualities.[8] Does not Aristotle say

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[4] In all likelihood, matter can be understood as three-dimensional body in Philoponean fashion, though also with prime matter this phrase would be true: if three-dimensionality as well as hot, cold, fluid, dry are accidents, Philoponus' opponents, whose doctrine is the issue here, would have to say that prime matter together with accidents makes up corporeal substance (i.e. the elements). Cf. Plot. *Enn.* VI.3 [44] 8.19-37 for whom the suggestion is not as absurd as Philoponus seems to think; cf. Armstrong (1962), Sorabji *MSM* Ch. 4.

[5] Of course, the analysis of body as an entity different from the elements follows from the independent position of the level of three-dimensional body at the time Philoponus was writing. For Aristotle the analysis of the elements amounts to the same as the analysis of body, for the four elements are the primary bodies. According to Aristotle no 'body' exists in the sensible world which is not one of the four elements or a composite of the four elements. Though Philoponus would not deny this latter statement, it makes sense for him to ask for (1) the constituents of body apart from (2) the constituents of the elements: in the first case the answer is 'matter and three-dimensionality', in the second 'body and the four qualities'.

[6] See e.g. Porph. *Isag.* 12.24-25.

[7] Wildberg (1988) 217 misleadingly refers to Porphyry's doctrine that all attributes are accidental attributes of prime matter (ap. Simpl. *in Cat.* 48.11-33), to account for the fact that Philoponus takes the objection to claim that three-dimensionality is an *accidental* attribute of prime matter. But (1) Philoponus does not speak of accidents of *matter*, and (2) Philoponus treats three-dimensionality as an accident because it is a quantity (422.5), and the distinction between substance and accident is implied in the difference between substance and any of the remaining nine categories (cf. 421.16-17).

[8] *Contra Proclum* XI.5 423.16-18 ἐν τῷ ποιόν τί ἐστιν τῶν εἰδῶν τε καὶ τῶν ἀτόμων φαμὲν κατηγορεῖσθαι. Cf. Arist. *Top.* I.9, IV.2 122 b 17-18, and *passim*; Porph. *Isag.* 11.7-8; note *Metaph.* 1003 a 9-12 (no common predicate signifies τόδε τι but τοιόνδε, cf. 1039 a 1). See further below under Q2, p. 182.

(*Cat.* 3 b 19-20) that species and genera delineate quality with regard to essence because they participate in the differentiae?[9] For example[10] hotness in fire is an essential and constitutive differentia, not an accident. Otherwise hotness would come into being and vanish without corruption of its substrate, which is impossible because one cannot even conceive of fire without hotness in thought. This kind of essential quality, being an essential differentia (οὐσιώδης διαφορά), does not belong to the category of quality, but to the category of substance.[11] In the same way there is such a thing as an essential quantity, of which three-dimensionality is the prime example. For[12] three-dimensionality

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[9] Interestingly, Philoponus explains *Cat.* 3 b 19-20 by means of the dependence of genera and species on differentiae, which according to *Top.* 122 b 16-17, 128 a 26-29, and 144 a 18-22 indicate a quality (of the genus). On the various senses of ποιόν, ποιότης and their confusion in the commentators, see below p. 181ff.

[10] Furthermore, Philoponus lists the heaviness of earth, the moist of water and air, the sweetness of honey, the whiteness of lead-paint and snow, and the sphericity of the cosmos, 423.23-26. Strictly speaking, whiteness in snow and lead-paint are inseparable accidents, not differentiae, on which see below p. 198ff. Also note that Philoponus called quantity as well as three-dimensionality an inseparable attribute of substance, *in Phys.* 561.11, 23 (see T28 p. 169).

[11] It is clear that the phrase οὐσιώδης διαφορά prepares the classification of the differentiae in the category of οὐσία. Note that we might translate either '*essential* differentia' or '*substantial* differentia'; on this problem see p. 223.—Cf. Porph. *Isag.* 8.7-10.21 for several divisions of the general notion 'differentia' among which the differentiae that constitute species are merely one type. Cf. Philop. *in Isag.* 207 (Baumstark).

[12] Surprisingly, Wildberg (1988) 217 interprets 424.7-11 as if Philoponus were *dropping* his earlier suggestion that the three-dimensional is an essential attribute of bodies, and *replaces* it with the idea that three-dimensionality is the οὐσία of body (Wildberg does not translate οὐσία so that his interpretation remains obscure on this point). However, this interpretation is not convincing because γάρ (424.7) marks 424.7-11 as a further development of the foregoing argument, not as a correction or contrast. Wildberg explains Philoponus' 'subtle move' by two arguments: (a) three-dimensionality as an *essential* attribute of matter (*pace* Porphyry) would not rule out the necessity of an indeterminate substrate; (b) in the *Physics* commentary Philoponus took 'the three-dimensional' as "some basic extended corporeality" which would be difficult to imagine as an attribute of body. However, although (a) is true in itself it is irrelevant because Philoponus regards three-dimensionality only as the essential attribute of *body*, not matter, whereas (b) rests on a puzzling notion of 'basic extended corporeality' apparently unrelated to body (which Wildberg *o.c.* 218 professes he does not understand himself either). This is an unnecessary complication since Philoponus is perfectly clear that the three-dimensional resides *in* bodies (424.8).—Note that if Wildberg's interpretation of 424.7-11 is incorrect, Wildberg 217 (compare 206) is not entitled to reject the remark by Wolff (1971) 109 that Philoponus regards three-dimensionality as a form (εἶδος); anyhow, this rejection would neglect Philoponus' clear statements to this effect at *Contra Pro-*

is the only feature seen in bodies which is self-subsistent (αὐθυπόστατος)[13] and the essence of body. Three-dimensionality belongs in the category of substance for the same reason essential qualities do: it is an essential differentia (οὐσιώδης διαφορά).[14]

From Philoponus' answer it is clear that he relies on a contemporary solution to the problem of the categorial status of the differentia: essential qualities and quantities belong to the category of substance, not quality or quantity. Apparently, this solution is based on a rather idiosyncratic interpretation of certain passages of Aristotle's *Categories* and on the puzzling notion of an 'essential differentia'. To understand these brief indications we shall have to examine the history of the problem of the categorial status of the differentia in more detail. It will be seen that both Alexander of Aphrodisias and Ammonius provide a perfect precedent for the classification of the differentiae of substances in the category of substance.

It may seem surprising that Philoponus calls three-dimensionality self-subsistent (αὐθυπόστατος), i.e. lacking a substrate. However, he did not believe that three-dimensionality exists *separately*.[15] It is clear that he does not observe any contradiction between three-dimensionality lacking a substrate and yet existing in bodies: 'three-dimensionality is the only *self-subsistent* thing conceived *in* bodies' (424.7-9). This means that in the downward direction of analysis three-dimensionality has no proper substrate in which it *inheres*; on the other hand it does not *exist* apart from sensible bodies and indeed needs that kind of real-life substrate for its existence. For as we saw earlier, only the *theoretical* analysis of sensible bodies yields the no-

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clum XI.7 427.8, XI.8 435.21-22. On three-dimensionality as form see further Chapter 5.

[13] In the vocabulary of Aristotelian exegesis this term refers to the familiar criterion of 'not being in a substrate' which Aristotle used in *Cat.* 1 a 20-b 9. Furley (1991) 40 n. 43 wrongly invokes the Neoplatonic notion of αὐθυπόστατος in this connection. For a more elaborate discussion of the issue, see below p. 264-265.

[14] For three-dimensionality as differentia, compare the Stoically inspired division at Simpl. *in Phys.* 601.14-24 (cf. Hoffmann [1979] 144 n. 3, 150-151); see also Ammonius' and Philoponus' divisions of substances, below p. 235ff.—Verrycken (1985) III 777-778 (cf. II 410-413) wrongly assumed that the application of the doctrine of essential qualities to quantities is new in the *Contra Proclum*; contrast my interpretation of Philop. *in Cat.* 65.8-66.5, below p. 231-232.

[15] In XI.5 423.1 Philoponus uses ὑποστῆναι χωρὶς αὐτῆς [*sc.* τῆς οὐσίας] to express this idea. Cf. Wolff (1971) 109 for a similar observation.

tion of corporeality of whose definition three-dimensionality is the constitutive differentia.[16]

First, however, we turn to two problems raised in modern literature which might unduly influence our estimation of Philoponus' new definition of matter.

I PRELIMINARY INQUIRIES

1 An apparent contradiction: the Corollary on Place

It has been pointed out[17] that Philoponus' argument is problematic as soon as we realize that elsewhere Philoponus seemed to support the very argument he now presents as an untenable objection to his own position. In the *Corollary on Place* Philoponus discusses Aristotle's first objection to the view that regards place as a three-dimensional extension over and above the extension of bodies (μέγεθος), *Phys.* 211 b 19-23.[18] If two extensions could conceivably coincide, Aristotle had argued, we cannot but assume an infinity of places in the same place because each part of what is in a place has its own corresponding extension. Philoponus replies to the objection by distinguishing several types of extension.[19] To be extended is not the same as to be a body, and nothing precludes a body and an incorporeal void extension from coinciding. Neither need two three-dimensional extensions divide each other, if coinciding lines or surfaces do not divide each other either. Philoponus stipulates that nothing prevents the existence of a self-subsistent three-dimensional extension, in itself void, though in fact always filled with a body, i.e. with corporeal extension.

In the following argument, against Aristotle's second objection to place as three-dimensional extension (*Phys.* 211 b 23-25), Philoponus states the same view in terms of substance and accident:

T28 1. For what is extended in three dimensions is not automatically a body; we shall not accept that this is a definition of body, since it is by virtue of being something else that body is extended in three dimensions. Body is a substance; quantity is an accident of substance (συμ-

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[16] Three-dimensionality is the differentia of extended body as opposed to the intelligible, non-extended realm, both of which are species of the genus substance; cf. *Contra Proclum* IX.11 346.5-7.

[17] Cf. Sorabji *MSM* 26.

[18] Philop. *in Phys.* 557.12-560.18.

[19] Cf. Simpl. *in Phys.* 623.12-19, discussed below p. 178ff.

> βέβηκε τῇ οὐσίᾳ), so three-dimensionality is an accident of substance. But body is a substance, and hence three-dimensionality is an accident of body. For it is body in that it is composed of matter and such-and-such a form, but because quantity is an inseparable accident of body, therefore it is extended in three dimensions.
> 2. [Aristotle] himself said this clearly in his criticism of Melissus, and I will quote one passage from what he wrote there in support of my claim (though I could quote more)—as follows: 'Melissus says that what *is* is infinite. So what *is* is a quantity, since the infinite resides in quantity, and one cannot make a substance or quality or affection infinite, except accidentally in case they are quantities at the same time too. For the definition of infinite employs the term "quantity", but not "substance" or "quality"' (*Phys.* I.2 185 a 32-b 3).
> 3. In these words, then, Aristotle says clearly that quantity is an accident of substance, and three-dimensionality belongs to quantity, and therefore three-dimensionality is an accident of substance. But body is a substance; so three-dimensionality is an accident of body. Now if three-dimensionality is an accident of body, then three-dimensionality is not the definition of body, but is an inseparable[20] accident. Hence, if something has three dimensions, it is not necessarily a body.[21] (*in Phys.* 561.5-24, transl. Furley [1991], slightly modified)

In §1 Philoponus clearly distinguishes body as a substance from three-dimensional extension by pointing out that body is something in its own right, independently of three-dimensional extension. Three-dimensionality is not the definition of body, but an accident. This brings to mind the first sense of accidental predication described in *Anal.Post.* I.4, which is also at work in the quotation from Aristotle in §2: three-dimensionality is not employed in the definition of body. Nor,

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[20] Reading ἀλλ' ἀχώριστον instead of ἀλλὰ χωριστόν in *in Phys.* 561.23, with Furley (1991) 21 n. 13, following Sedley (1987), 149 n. 27 (cf. 569.11). The latter notes deficiencies in the text translated here and thus chooses to 'accord the passage less emphasis than it would otherwise deserve'. Sedley notes that (a) what Aristotle *Phys.* 185 a 32-b 3 called accidental to substance must be not the determinable, quantity, but any determinate quantity; and (b) Philoponus *does* normally regard quantity as definitional to body, since it is precisely what differentiates it from matter. In response to (a) one could point out that the (anachronistic) distinction between determinable and determinate is not the issue here, but only the relation between quantity and substance as illustrated by the passage; cf. Arist. *Phys.* I.2 185 b 4-5 εἰ δ' οὐσία μόνον (*sc.* τὸ ὄν), οὐκ ἄπειρον, οὐδὲ μέγεθος ἕξει οὐδέν. As to (b), the lack of references makes it hard to determine the extent of the 'deficiency' Sedley has in mind. Anyhow, the notion of 'body' needs to be clarified before Philoponus' remarks can be properly assessed, for which see the main text.

[21] Philoponus postpones the discussion of a related problem, whether it is possible for a quantity (such as the matterless incorporeal extension of place) to exist on its own, to *in Phys.* 578.5-579.18; see further below, p. 174ff.

we may add, does the notion of body occur in the definition of three-dimensionality, and three-dimensionality is thus accidental to body in that (second) sense too. Notice that Philoponus points out that body as here understood is composed of matter and form. Since three-dimensionality is obviously not the form meant there, we may infer that 'body' refers to *physical* body—which is indeed to be expected in a context discussing the physical notion of place and its relation to the body in it.

This observation is relevant to the claim that Philoponus' statement in *Contra Proclum* XI.5, i.e. that three-dimensionality constitutes the definition of body, jeopardizes his account of place. For it was argued that if three-dimensionality *does* define body after all, it becomes obscure how place, which is also three-dimensional, can be distinguished from body. However, as should be clear by now, the notion of body employed in XI.5 is different from the notion of body in the *Corollary on Place*. In XI.5 Philoponus addresses the indefinite three-dimensionality immanent in physical bodies, which he believes remains unaltered even during the changes of the elements into each other. This concept of body-as-such is properly defined by three-dimensionality alone, as also the earlier Philoponus acknowledges.[22] The *Corollary* on the other hand addresses composite physical bodies, and quite rightly considers their (definite) three-dimensional extension as accidental to their essence, in both senses of accidental distinguished in *Anal.Post.* I.4. Hence *Contra Proclum* XI.5 does not affect Philoponus' discussion of place in the *Corollary on Place*. In short, the same three-dimensional extension is accidental to the composite but essential to body-as-such.

It is conceivable that the notion of inseparable accident employed in §1 and §3 brought about a connection between these two notions of body and matter. Porphyry[23] defines inseparable accidents as features that do not occur in a substance's definition but nevertheless accompany it as long as it exists. Examples are the whiteness in the swan and in lead-paint, or the blackness in the raven. Since the definition captures the *form*, Alexander[24] had argued that these inseparable accidents

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[22] For the (mathematical) concept of body see e.g. Philop. *in Cat.* 91.4-15, 95.4-96.6, *in Anal.Post.* 131.13, 213.17-215.5, *De intell.* 80.59-81.85 etc.

[23] See Porph. *Isag.* 12.24-13.8.

[24] Alex. *in Top.* 50.21-51.4, cf. Alex. *Mant.* 168.22-169.32 (on male and female). This solution is not new with Alexander, but derives from Aristotle, *Metaph.* X.9 1058 a 29-b 25 (male and female are οἰκεῖα πάθη), see Lloyd (1962) 88-89. The *in Top.* passage is discussed in Ellis (1994) 87-88 who believes (wrongly I think) that

owe their unique position to the *matter* of the substances they accompany. In the case of snow, for instance, its whiteness is a concomitant of the freezing of the clouds by means of which snow is generated. We might conjecture that if Philoponus believes that three-dimensionality is an inseparable accident of physical bodies (including the elements), and if he agrees that inseparable accidents derive from matter, he may have inferred that three-dimensionality derives from the matter of the elements. After all, in his **Symmikta Theoremata* he had already shown that unqualified body remains unchanged in elemental change insofar as it is body, which was by then a long-standing Neoplatonic tenet.[25] In the *Contra Proclum* Philoponus argues again that 'body' (in the restricted sense) is the only feature that survives the change of the elements, and now he infers that it is therefore entitled to the name of prime matter.

2 Aristotle's scheme of categories disrupted?

Sorabji has claimed that in the *Contra Proclum* Philoponus argues for the promotion of three-dimensional extension to being the form, differentia, essence or essential attribute of body,[26] which, he believes, implies the disruption of Aristotle's categories.[27] For three-dimensional extension is now considered the essence of body and the distinction between substance and accident breaks down.

However, it seems to me that Philoponus was rather anxious *not* to disrupt Aristotle's scheme of categories by breaking down the distinction between substance and accident, and neither was his master Ammonius. Therefore we have to see whether it is possible to interpret them without assuming a disruption.

We should also point out that Philoponus already referred to this doctrine in earlier works. In the *theoria* on Quantity (*in Cat.* 88.3-10),

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differentiae are included, see further below, p. 201ff. I am grateful to Dr Ellis for sending me the final draft of his paper before publication.

[25] Cf. the reference to Philoponus' discussion of it in his **Symmikta Theoremata*, Philop. *in Phys.* 156.10-17. For Neoplatonic precedents, see Chapter 2.

[26] Sorabji *Philoponus* 19, who refers to *Contra Proclum* 405.24-27, 423.14-424.11, 424.24, 425.5-6, 427.8 (form), 435.21-22 (form of body and first magnitude). The last three qualifications all occur in XI.5 and shall be discussed in this chapter; for 'form' see Chapter 5. Cf. Wildberg (1988) 218-219 who draws a similar conclusion, though he wishes to speak of a modification of earlier conceptions rather than of a radical *volte-face*.

[27] Sorabji *Philoponus* 23-24, followed by Ellis *o.c.* 69.

Philoponus raises a traditional problem of exegesis: why is body, which is after all a substance, assigned to quantity? Philoponus answers that, 'as has been said many times',[28] there are essential qualities (e.g. hotness in the case of fire) as well as essential quantities (e.g. the three-dimensional in the case of body). Therefore hotness in fire considered as such (not as fire) is a quality; body considered as such (σῶμα ἁπλῶς θεωρούμενον) is a quantity.[29]

As we know from Simplicius (*in Cat.* 125.13-16) the problem derives from one of Lucius' aporiai against Aristotle,[30] who objected that Aristotle assigned a substance to the category of quantity also.[31] The other version of Ammonius' lectures on the *Categories*, in answering the same objection (Amm. *in Cat.* 65.26-66.3), distinguishes between enmattered body (ἔνυλον σῶμα) which Aristotle meant to belong to the category of substance, and the mathematical solid considered in thought (τὸ λόγῳ θεωρούμενον *sc.* σῶμα), which belongs to quantity. It should be noted that for Ammonius these are different entities altogether, since he believes that mathematical objects exist in thought only.[32] Olympiodorus (*in Cat.* 83.36-84.3) offers the same solution, and describes the physical body i.e. 'the three-dimensional' as a substance,[33] whereas mathematical body taken in thought (ἐν ἐπινοίᾳ λαμβανόμενον) is a quantum.

Though Philoponus' commentary derives from Ammonius' lectures also, his distinction between three-dimensionality as an essential quantity (or substance) and as a quantity proper is hard to understand

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[28] Cf. Philop. *in Cat.* 38.25-39.6, 42.13, 65.30-66.2, 66.13-14. Perhaps however essential qualities and quantities were discussed in the course on Porphyry's *Isagoge*. The phrase 'as has been said many times' may even derive from Ammonius' original course.

[29] The same distinction was already made by Plot. *Enn.* VI.3 [44] 15.15-17.

[30] See Simpl. *in Cat.* 1.18-2.9. Cf. Dillon (1977) 233-236, Wiesner II 536-539. Many of Plotinus' criticisms in *Enn.* VI.1-3 [42-44] derive from those compilations. From Porphyry onwards the commentators tried to reconcile the *Categories* with Neoplatonism, and Porphyry is known to have answered all objections in his enormous commentary *in Gedalium*, which is unfortunately lost. Simplicius *l.c.* rightly notes that Lucius' aporiai induced fruitful developments of the issues involved. The reconciliatory approach to these aporiai can be seen from the formulation of this problem here, which is no longer a rebuke but an inquiry into the reason of Aristotle's classification.

[31] See Wiesner II 544-545, 370ff.

[32] See e.g. Amm. *in Isag.* 11.31-12.6, with Mueller (1990) 465-467.

[33] Note that here 'the three-dimensional' must refer to the composite physical body, and not to three-dimensionality as such.

on the same lines.[34] Perhaps his answer derives from Ammonius' lemma on *Cat.* 5 a 3 (Amm. *in Cat.* 58.7-9) where it is stated that 'body is also called a quantity, but only with respect to the three dimensions, since it is counted under substance in virtue of being a subject for accidents and being capable of receiving contraries while [remaining] one and the same in number'.[35] At least there the same distinction is made, though in Philoponus substantiality is derived from being a differentia, not from being a subject or from receiving contraries. We may conclude for now that the notion of essential quantity had arisen in discussions over Aristotle's *Categories* long before Philoponus made use of it.

Sorabji regards the disruption as a further development of Philoponus' position in the *Corollary on Place*[36] where, though three-dimensionality was still classified as a quantity, the priority of substance was already played down. For Philoponus points out that no substance can exist without quantity,[37] while corporeal and spatial extension could exist on their own 'as far as their own definition (λόγος) is concerned'.

Needless to say, if Philoponus is drawing on a long tradition there is no innovation to be prepared for in earlier work. Nevertheless, I admit that in the *Corollary on Place* Philoponus first turns the one-way dependence of quantity on substance upside down: substances cannot exist without some determinate quantity. However, he continues:

T29 1. Thus I would say that natural forms have their being in quantity as in a substrate. And what is one to say about quantity? None of the natural forms could subsist without matter; so all are properties accidental to matter.[38]

(...)

2. Furthermore, it is also possible to assert that none of the categories subsist without implicating each other. For it is not possible to dis-

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[34] In *in Cat.* Philoponus envisages the distinction between body and its essential quantity, whereas in *Contra Proclum* XI.3, 414.6-7 he explicitly excludes from the discussion body as 'the universal, in a way generated, and only studied in our thought and in reason (ἐν τῇ ἡμετέρᾳ μόνῃ ἐπινοίᾳ καὶ τῷ λόγῳ θεωρούμενον)'. It is likely that mathematical body is among the kinds of body ruled out by this expression.

[35] Transl. Cohen/Matthews (1991) 68.

[36] *In Phys.* 587.15-20.

[37] For quantitative conditions of the realization of forms see Chapter 3 p. 157.

[38] This idea had been emphasized by Porphyry in response to a notorious problem about the so-called definition of accident (*Cat.* 1 a 24-25), for which see below p. 198ff.

> cover one category subsisting without implication with the others, not even substance itself which is said to be able to subsist by itself.
> 3. Matter, too, and the second substrate—I mean the three-dimensional and unqualified body which is able to subsist by itself inasmuch as depends on it— nevertheless never subsist without qualities. So place-extension, too, even if inasmuch as depends on it, it could subsist by itself (for what could prevent space from being empty of body, as we said (568.14ff), if we think of the jar containing no body inside it?), does not, all the same, ever remain empty of body all by itself. Just as in the case of matter, when form is destroyed, another form at once supervenes, so too in this case the exchange of bodies never leaves the space empty: simultaneously one body departs, and another rushes in instead. And thus it is never possible to find even this kind of quantity without substance. (Philop. *in Phys.* 578.23-26, 578.32-579.14, transl. after Furley [1991])

Hence, the independence in question is merely *theoretical*, and not to be found in reality. This suffices for Philoponus' aim in the *Corollary*, to plead for the *conceivability* of a separate three-dimensional extension, against Aristotle's claim that such a notion would be absurd. Meanwhile, the scheme of the categories is preserved insofar as it is still impossible for a quantity to subsist without substance,[39] though perhaps adjusted in the sense that all categories contribute equally to the *existence* of a thing. This levelling is obviously derived from the Neoplatonic view according to which *all* attributes (as manifestations of Forms) equally inhere in prime matter (conceived on the model of the Timaean receptacle) to which they are all equally accidental. Even so, I venture to doubt that Aristotle ever meant the priority of substance in the *Categories* to entail that a substance could ever *exist* without qualities.[40]

What is more important, however, this issue leaves aside the respective contributions of members of non-substance categories (immanent forms) to a things' *essence* and therefore does not seem to be connected with the problem of the status of the differentia. For that problem precisely turns on the distinction between essential and accidental qualities, quantities etc. In other words, what is at stake now is

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[39] As Philoponus confirms, *in Phys.* 579.15-17.

[40] Existence is presupposed by Aristotle when talking about essence. Only from the Platonic perspective of bundles of μετεχόμενα, which are equivalent inasmuch as they are μετεχόμενα, one needs to differentiate between what is necessary for something's existence and what is necessary for something's essence. See esp. Arist. *Sens.* VI 445 b 3-15.

the internal hierarchy of the categories, as based on their significance for the thing they constitute, not on their relation to prime matter. We need not, then, consider the passage from the *Corollary* as relevant in this connection.

This is not to say that Aristotle's distinction between substance and accident was not jeopardized in Neoplatonism. As has been pointed out in the literature more than once,[41] Plotinus' analysis of Aristotle's *Categories* in *Enneads* VI.1-3 provides trenchant criticism which, if followed through, would entirely uproot Aristotle's approach to the sensible world, not least his distinction between substance and accident as well as the very existence of differentiae. Arguing from a Platonic point of view, Plotinus draws the picture of an intelligible world which is called Being (τὸ ὄν), a unity characterized by Plato's five genera (Being, Motion, Rest, Sameness, Otherness) which are its actualities, not its species or differentiae.[42] At all levels of genus and species unity prevails over the distinction between substance and accident: a substantial form comprises all it needs for its reality and can do without differentiae or other 'completers of *ousia*' (συμπληρωτικὰ τῆς οὐσίας) which come to it from the outside.[43] When dealing with sensible particulars there simply are no completers of *ousia* either: a human being, for example, already *is* an *ousia* before he comes to the differentiation. Its so-called differentia 'rationality' is already present in a hidden way at a higher level.[44] When we distinguish substance from accident we are only unfolding this unity by distinguishing its actualities (ἐνέργειαι) which our poor discursive mind cannot grasp otherwise.[45] Needless to say, these actualities of substance are substantial.[46] On the other hand one cannot even speak of substance in the sensible world: there is nothing as stable as that available for accidents to inhere in. Rather, the sensible world is to be reduced to bundles of mat-

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[41] Wurm (1973) Kap. 5; Anton (1976); Strange (1987) 955-957, 964-974; Lloyd (1990) 85-97.

[42] *Enn.* VI.2 [43] 2, 8, 15, 19.

[43] Cf. *Enn.* VI.2 [43] 19.3-4.

[44] *Enn.* VI.2. [43] 14.18-22; VI.2 [43] 13.9: ἐνυπάρχει τὰ ὕστερα ἐν προτέροις.

[45] *Enn.* VI.2 [43] 6.18; VI.2 [43] 7.7-24; II.6 [17] 3.1-20. Cf. Wurm *o.c.* 240-250 who lists many indications of 'die Unzureichendheit des diskursiven Denkens'; Strange *o.c.* 972-974.

[46] *Enn.* VI.2 [43] 15.8-11; V.4 [7] 2.28-29.

ter, 'qualities' and 'quantities' which come about as the effects of actualities at higher levels.[47]

Surely, this radically Platonic picture does away with Aristotle's scheme of *Categories* root and branch. Proclus follows Plotinus in denying the relevance of distinguishing genera from differentiae in the sensible world and in relating all pure thought to the forms in our soul, and through them to the Forms in Intellect.[48] However, Strange has suggested with some plausibility that *Enn.* VI.1-3 [42-44] should be seen as a critical rethinking of Aristotle's *Categories* without the purpose of destroying it.[49] In that case Porphyry, in incorporating the *Categories* in Neoplatonist thought, would not have opposed his master as much as he is sometimes thought to have done.

However that may be, Porphyry is much less radical than Plotinus, and accepts Aristotle's ten categories as a suitable tool to understand the sensible realm. He also takes over Aristotle's distinction between substance and accident which he applies throughout his works. Insofar as all commentators after him start with the *Categories* as an appropriate introduction to philosophy in general and to Aristotelian thought in particular, we would be surprised if they did *not* adhere to Aristotle's distinction between substance and accident. Even though the problem of substantial qualities and quantities is considered significant, they try to solve it within the framework of Aristotle's *Categories* as much as possible. And if they go beyond this framework, it is not for Plotinian reasons. Perhaps Plotinus' radical approach is still reflected in Porphyry's claim that *all* characteristics of sensible things are accidental to prime matter,[50] and in Philoponus' admission that as far as the *existence* of sensible bodies is concerned substance, quality

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[47] *Enn.* VI.3 [44] 8: the differentiation between completing and not-completing qualities, quantities etc. is here clearly argued to be futile. Cf. *Enn.* VI.3 [44] 15.24-38; II.6 [17] *passim*; VI.6 [34] 5.26-29. See Wurm *o.c.* 250-262, esp. 255-257.— Also the form σωματότης which generates body in matter is of that kind, II.7 [37] 3.1-4, which forestalls both Simplicius' and Philoponus' notions of prime matter. For the relation between Plotinus and Philoponus see p. 104ff.

[48] Procl. *in Parm.* 981.11-39.

[49] Strange *o.c.* 964. Cf. also Wurm *o.c.* 165, 218-220 who notes the difficulty of the intertwining of incorporation and criticism of Aristotelian doctrine in Plotinus, and mentions the substance/accidents distinction as one of the schemata which Plotinus employs; nevertheless Plotinus goes beyond the defenders of Aristotle in his discussion of the *Categories*. On 'Der aristotelesfreundliche Neuplatonismus' see *o.c.* 193-220.

[50] Discussed below, p. 204-205. Cf. Plot. *Enn.* VI.3 [44] 3.6-9. For a trace of this view in Philoponus, see *in GC* 65.6-21.

and quantity are equal and the hierarchy among the categories is irrelevant.[51] But Porphyry's claim concerning prime matter was soon dismissed, and I have found no Neoplatonic commentator on Aristotle who did not accept for all practical purposes Aristotle's distinction between substance and accident. Their means of Neoplatonizing Aristotelian thought were subtle enough not to necessitate the downright rejection of a fundamental feature of Peripatetic philosophy.[52]

In support of his view Sorabji has argued[53] that Simplicius parallels Philoponus' disruption of Aristotle's scheme of categories by suggesting that extension is a substance, not an accident. Though this is true for *spatial* extension,[54] as we shall see, Sorabji also claims that Simplicius places *material* extension in the category of substance. In support of this claim Sorabji quotes Simpl. *in Phys.* 623.18-20, thus:

T30 Different from these [extensions (διαστήματα)] again is material dimension (ὑλικὴ διάστασις), which is conceived by reference to stretching and indefiniteness. But neither (οὐδέ [i.e. no more than material dimension]) is place (τόπος) an accident (συμβεβηκός); it too (καί [i.e. like material dimension]) is substance (οὐσία), for it is not dimension plain and simple (διάστασις ἁπλῶς), but extended space (διαστῶσα χώρα).[55]

These lines are taken from Simplicius' *Corollary on Place*[56] where Simplicius discusses seven aporiai he himself raises against the view

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[51] See above, T29 p. 174. Cf. Plot. *Enn.* VI.3 [44] 8.12-23.

[52] Cf. Wurm *o.c.* 208-209 who shows how Simpl. *in Cat.* 78.20-24 retains the substantiality of the Aristotelian form against Boethus' claims that it should rather be quality (his motives are of Stoic origin, according to Wurm). Simplicius points out that that which qualifies substance (τὸ ποιωτικὸν οὐσίας) is itself substance. This phrase incorporates both Plotinus' view that the form presents itself as a quality, and that it requires something substantial in order to do so. The distinction between substance and accidents is maintained, and the notion of immanent form (= οὐσία) continues to be used alongside the transcendent form.

[53] *MSM* 14, *Philoponus* 23, *Analyses* 10, *Simplicius* 156.

[54] See Sorabji *Philoponus* 23 and *Analyses* 10, as well as *MSM* 14 and *Simplicius* 156 in passing. For subsistent three-dimensional extension in the case of place (or space) in Philoponus, see T29 above.—Note however that Porphyry already states that mere quantity can still be substance, *in Cat.* 100.23-28, though without example.

[55] Sorabji *MSM* 14 = *Simplicius* 156; cf. *MSM* 17-18 where the same passage is translated together with some preceding lines, 623.14-20. The Greek runs: ἄλλη δὲ παρὰ ταῦτα ἡ ὑλικὴ διάστασις κατὰ τὴν δισπασμὸν καὶ τὸ ἀόριστον θεωρουμένη. Ἀλλ' οὐδὲ συμβεβηκὸς ὁ τόπος, ἀλλ' οὐσία καὶ οὗτος. Οὐ γὰρ διάστασις ἁπλῶς ἐστιν, ἀλλὰ διαστῶσα χώρα (Simpl. *in Phys.* 623.18-20).

[56] Note that this is the same context as Philoponus' T3 translated above, p. 32.

that place is three-dimensional extension (διάστημα), after refuting Aristotle's objections against it (*in Phys.* 620.32-623.31). The third and fourth aporiai read as follows:

3.	Why accept two extensions in one place when dealing with the extensions of body and place, but reject it when dealing with two bodies? (622.17-21)	Discussion: 623.12-19
4.	Body is a substance and is in a place; place as extension is a quantity and hence an accident; therefore body is in an accident. (622.21-24)	Discussion: 623.19-21

It will be clear that the text as translated by Sorabji (623.18-20) crosses the boundary between the discussions of the third and fourth aporia. In answer to the third aporia Simplicius argues that it is possible for two extensions to be in the same place if one is corporeal extension in a place, the other void or space. This induces Simplicius to distinguish four types of extension (623.14-19):[57]

1. in unextended λόγος only, i.e. the definition of extension;
2. in thought of extension (ἐν ἐπινοίᾳ διαστάσεως), i.e. mathematical extension;
3. enmattered, including physical qualities and resistances, i.e. [physical] body;
4. enmattered but altogether unqualified and incorporeal, [i.e. place].[58]

Over and against these four types of extension, which all imply definiteness of some sort, Simplicius lists:

5. material extension (ὑλικὴ διάστασις) which is conceived in stretching and indefiniteness.[59]

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[57] Note the parallel with T3-5 which show the same approach to a similar problem, see Chapter 1 p. 32-35.

[58] That this type of extension is place is clear from Simplicius' answer to the first aporia, viz. that τόπος is enmattered, 623.4. Diffusion, possession of volume, and indefiniteness are associated with the material aspect (τὸ ὑλικόν); border, limit, and shape are associated with the formal aspect (τὸ εἰδικόν). These aspects are also present in the notion of extension: its diffusion, relaxation belong to the material, its measure and border to the formal aspect. This text is the closest parallel I have found for our initial distinctions between extensionality, which corresponds to τὸ ὑλικόν here, and extension, which corresponds to τὸ εἰδικόν (see p. 47-48).—Note that this notion of place already prepares for Simplicius' own view of place as an essential limit, which is different from Aristotle's notion of immovable place. On Simplicius' notion of place see further Hoffmann (1979).

At this point (623.19) Simplicius turns to the answer of the fourth aporia, which is very short indeed: place is not an accident but just like the body it contains, it is a substance. For it is not mere extension (διάστασις ἁπλῶς)—which, it seems to be implied, would be an accidental quantity—but extended space (διαστῶσα χώρα). Hence lines 623.18-20 should be construed as follows:

T31 *ad 3.* (...) Different from these [extensions] again is material extension, which is conceived by reference to stretching and indefiniteness. *ad 4.* But neither[60] is place an accident; it too [i.e. like body which is in it] is substance, for it is not extension plain and simple, but extended space.

In conclusion, we may say that it is clear that for Simplicius self-subsistent extended space is a substance. On the other hand, we should note that Simplicius does not consider *material* extension to be a substance—at least that cannot be inferred from this passage. Such a tenet would be quite unexpected, for in Simplicius the indefiniteness of material dimension as such is in no way determined by a formal component, and in the *in Physica* passage discussed earlier[61] it features as the very opposite of substantial being. Last but not least, Simplicius explicitly rejects the idea as absurd in *in Cat.* 116.9-10: "On the basis of all this [the argument of Aristotle's critics] reached the absurdity of believing that matter is truly substance".

II THE PROBLEM OF THE CATEGORIAL STATUS OF THE DIFFERENTIA

The question to what category the differentia belongs is an issue that has bothered almost every commentator on Aristotle in Antiquity. This is surprising since the issue is hardly dealt with in modern commentaries on Aristotle.[62] Part of the explanation for this is that the ancient

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[59] This type of extension is already familiar from Simplicius' account of matter, above p. 102ff. Note that material extension is not the issue here, but is only listed for the sake of completeness.

[60] Note the connecting phrases (*ad 2*) καὶ οὐδὲν ἄτοπον ... (*ad 3*) οὐ μέντοι οὐδέ ... ἄτοπον ... (*ad 4*) ἀλλ' οὐδέ συμβεβηκὸς ὁ τόπος, ἀλλ' οὐσία καὶ οὗτος. In the last phrase οὐδέ picks up the next aporia, not material dimension mentioned in the last sentence.

[61] See Chapter 2, p. 121 (T19).

[62] There is one noticeable exception: Anscombe (1961), an interesting essay devoted to Aristotle's search for substance, includes a lucid discussion of some of the issues to be raised below, including the categorial status of the differentia. See

discussions betray a certain amount of terminological confusion which is to a large extent absent from modern commentaries. The ancient commentators combine several passages of Aristotle relating to different notions of quality and qualification to support a particular interpretation of the issue. So we shall clarify some of these notions before attempting to assess Aristotle's own position.

As to Aristotle, it is surprising that he did not discuss the problem at all (another reason why modern commentators hardly comment on it). So when we venture to interpret Aristotle we shall have to account for the discrepancy between Aristotle and his commentators.

Since we set ourselves the task of providing the background for Philoponus' reference to the categorial status of the differentia in *Contra Proclum* XI.5, a survey of the earlier commentary tradition is called for. We shall find that three aporiai concerning the *Categories* as well as the notorious problem of Being as a genus provide the commentators with the occasion for discussing the position of the differentia. Philoponus stands firmly in the Ammonian tradition and therefore classifies three-dimensionality, the differentia of body, in the category of substance.

1 The difficulty of the interpretation of 'quality'-terms[63]

It is well-known that the Greek word for 'quality' (τὸ ποιόν, ποιότης) has many senses. It seems that the interpretation of terms denoting quality in Aristotle was a difficult task even for the ancient commentators on Aristotle. Since a proper understanding of these terms is paramount for the interpretation not only of Aristotle's texts but also of the arguments of the commentators, I shall distinguish several senses of quality-terms (referred to as Q1-5), and indicate some of the interpretations to which they gave rise. The list is not meant to be exhaustive.

Q1 In his so-called 'philosophical dictionary' in *Metaph.* V.14 Aristotle defines 'differentia' as the first sense of the term 'quality', in opposition to affections of changing entities:

T32 We call a 'quality' (τὸ ποιόν) (1) the differentia of the substance, e.g. man is an animal of a certain *quality* (ποιόν τι ζῷον) because he is

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esp. Anscombe (1961) 11-14, 33-39. I am grateful to Robert Sharples for drawing my attention to Anscombe's work.

[63] For the sake of future reference the paragraphs discussing different uses of quality-terms are numbered. Some of the distinctions made below were already clearly described in De Rijk (1978) 104-107.

> two-footed, and the horse is so because it is four-footed; and a circle is a figure of particular *quality* (ποιόν τι σχῆμα) because it is without angles—which shows that the differentia with reference to substance is a quality (ποιότης). (Arist. *Metaph.* V.14 1020 a 33-b 1; *RevOT*)

Apparently, the Greek may use *quality* and its cognates to denote what in English would be styled 'a certain *kind* of animal'. Hence, when the differentia is a quality, the problem of the categorial status of the differentia is reduced to the problem of distinguishing these two senses of 'quality'. For when e.g. 'two-footedness' is taken in itself, it will be classified as an affection; when used as a differentia of animal, 'two-footedness' may be called a quality in the first sense.[64] However, Aristotle does not discuss the same kind of difficulty in the case of e.g. quantities. Therefore it is unclear what we should call e.g. 'two feet long' (itself a quantity) when it is used as a differentia: a 'quality' in the first sense (T32), or rather an essential quantity? In the latter case we would be introducing a parallel distinction in the term 'quantity'—as Philoponus did.[65]

Q2 The expression which Aristotle uses to support the first sense of 'quality' (i.e. ποιόν τι ζῷον) is also employed in a series of passages where Aristotle claims that the differentia is predicated of the species in quality (ἐν τῷ ὁποιόν τι ἐστιν) because it denotes *of what kind* a species is.[66] A genus, on the contrary, is said to be predicated in the essence (ἐν τῷ τί ἐστιν) because it denotes *what* a species is. In this way Aristotle intends to provide a general means of distinguishing between differentia and genus, not just between differentiae and genera of substances. The point is reflected in the definition of the differentia in Porphyry's influential *Isagoge* (11.7-8): 'the differentia is predicated in quality of many things differing in species.'

In these texts Aristotle is referring to his list of ten kinds of 'predication' in which the four predicables[67] are always found: essence

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[64] So Plot. *Enn.* VI.3 [44] 15.15-18.

[65] Cf. Plot. VI.3 [44] 18 on the question whether all qualities are differentiae, noting among others that there seem to be differentiae which are not qualities.

[66] See *Top.* IV.2 122 b 16-17; IV.6 128 a 26, 144 a 17-19, 144 b 31-145 a 2; *Metaph.* V.14 1020 a 33-35 (discussed above), 1020 b 14-16; X.9 1058 a 37; *Phys.* V.2 226 a 27-29.

[67] I.e. definition, genus, proprium, and accident, as introduced in *Top.* I.5, and discussed in *Top.* I.8.

(τί ἐστιν), quantity, quality (ποιόν), relation, etc.[68] Though these kinds of predication closely resemble the categories in wording, the two lists should be carefully distinguished, as Aristotle's examples make clear.[69] It will be seen, however, that many ancient commentators adduce texts concerning predication in quality$_p$ in support of the classification of the differentia in the category of Quality, or texts concerning predication in essence$_p$ in support of its belonging to the category of Substance.[70]

Some passages in the *Topics*[71] state or imply that the differentia is also predicated in the essence$_p$, just like the genus. The clearest example is the following:

T33 For if a definition is a description which indicates the essence of a thing, and the predicates in the definition ought also to be the only ones to be predicated of the thing in the essence$_p$ (and the genera and differentiae are predicated in the essence$_p$), it is obvious that, if one were to assume that these alone were predicated in the essence$_p$, the description containing them would necessarily be a definition; for nothing else can possibly be a definition, since nothing else is predicated in the essence$_p$. (Arist. *Top.* VII.3 153 a 15-22; transl. Forster [1960])

The idea is not difficult to understand: the definition is predicated in essence$_p$; the definition consists of genus and differentia; as such, the differentia is also predicated in essence$_p$.[72] Note that the connection with the definition is crucial in this context. In fact, in the *Topics* Aristotle never discusses the differentia on its own: it is not a separate predicable but is contained in the definition[73] and explicitly associated

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[68] Cf. *Top.* I.9 103 b 20-21 γένη τῶν κατηγοριῶν. For a more detailed examination of this text see pp. 189-192 below. On the meaning of κατηγορία see De Rijk (1980) 1-33 who stresses the aspect of 'naming' or 'categorization', see also De Rijk (1988); Ebert (1985); Frede (1987) Ch. 3: "Categories in Aristotle".

[69] See Frede (1987), Ebert (1985), Morrison (1993) 148-149. I am grateful to Prof. Morrison for providing me with both an early draft of his paper and a copy of it after publication.

[70] So do Anscombe (1961) 13-14 and Wurm (1973) 122. Henceforth I will designate the categories by means of capitals (e.g. Quality), and the kinds of predication by means of a subscript 'p' (e.g. quality$_p$).

[71] Cf. *Top.* I.18 108 b 22-23, VII.3 153 a 15-22, VII.5 154 a 27-28.

[72] See Morrison *o.c.*158-159.

[73] Cf. *Top.* I.5, the introduction of the predicables, which does not even mention the differentiae; *Top.* I.9 103 b 21 refers to the predicables as being four in number. However, the differentia does feature in *Top.* I.8 in the *divisio* yielding the four predicables, but only as a part of the definition. Evangeliou (1985) has argued con-

with the genus.[74] Consequently, the differentia is treated mainly in the chapters on genus (IV) and definition (VI).

Nevertheless, in *Top.* IV.6 128 a 20-29 Aristotle seems to reject the predication of the differentia in the essence$_p$, a view he presents as held by others: 'Since some people hold that the differentia also is predicated of the species in the essence$_p$, the genus must be distinguished from the differentia (...).' This statement is followed by a list of three criteria for distinguishing the genus from the differentia: (1) the genus has a wider extension than the differentia ('is predicated of more'); (2) the genus is a more informative answer to the question *what* something is than the differentia; and (3) the differentia is a quality (ποιότης) of the genus but not vice versa (see below Q4). The emphasis on the need for distinction suggests that here Aristotle understands predicating the differentia as predicating the differentia *on its own*, not as part of the definition and therefore not associated with the genus. This interpretation is confirmed by the second criterion in particular. Hence Aristotle's objection, for then the differentia is in fact considered as an independent predicable on the same footing as the genus. It seems that at some point in time Aristotle allowed the differentia to be predicated in the essence$_p$ only when taken together with the genus as part of the definition;[75] taken on its own, the differentia must give way to the genus, and should be considered as the less informative part of the definition, which is merely predicated in quality$_p$.

On this interpretation there is no need to assume an inconsistency in Aristotle's account of the kind of predication the differentia involves, as Morrison does.[76] Nor can these texts be used to construct an earlier

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vincingly that Porphyry's five φωναί genus, species, differentia, proprium, and accident, are not to be regarded as a perversion of Aristotle's theory of predicables.

[74] *Top.* I.3 101 b 18-19. This passage seems to focus, then, on the *divisive* function of the differentia, rather than the *constitutive* one. It should be noted that ranking the differentia with the genus (because it is 'generic', γενική) and therefore (?) with the definition suggests—rightly or not—that it is predicated in the essence accordingly.

[75] Note that the ancient commentators point out that the uninitiated tend to take τὸ λογικόν as τὸ λογικόν ζῷον; predicating λογικόν would then amount to predicating the differentia *and* the genus, i.e. the definition. This way λογικόν would be considered a predication in the essence$_p$. See e.g. Philop. *in Cat.* 67.3-7; cf. Simpl. *in Cat.* 100.13-101.24 containing Iamblichus' answer to an aporia which turns on this distinction.

[76] Morrison *o.c.* first assumes the *Categories* and the *Topics* to represent a unitary body of doctrine (148), and then notices this inconsistency (158). He does not make clear why he excludes the possibility of the *Categories* and *Topics* reflecting differ-

and a later stratum in the *Topics* as Granger tries to do.[77] Granger (1984) envisages three stages the first two of which he finds in the *Topics*: 1. genus is prior to differentia; 2. genus and differentia are more on a par, e.g. both are now predicated in essence$_p$; 3. the differentia is prior to the genus (esp. *Metaph.* VII.12). It will be clear that I see no reason to accept the second step of this chronology.

Nevertheless, it is clear that Aristotle's thoughts about the differentia underwent a considerable development given that the first and third periods Granger proposed still stand. Granger suggests that a substantial confusion on Aristotle's part motivated the development:[78] first Aristotle modelled his *genos-eidos* relationship on proper genera and species, and his examples are kinds like animal and man; however, he transferred this relationship to the classification of characteristics, although characteristics are actually related in determinable-determinate relationships,[79] where the determinate (regarded as differentia) entails the determinable (regarded as genus). Subsequently (*Metaph.* VII.12), Aristotle transferred the notion of entailment to the realm of kinds, now modelling the genus-species relationship after the determinable-determinate relationship.[80] In short, according to Granger Aristotle confused kinds and characteristics and their respective types of relationship.[81]

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ent stages in Aristotle's thought. Incidentally, even within the *Topics* there is no need to assume a unity of doctrine in the compilation of Academic dialectical practice it constitutes. On the issue discussed in the text, however, I am prepared to accept a unity of the doctrine.

[77] See Granger (1984).

[78] Here I follow the clear exposition in Granger (1980), distinguishing only two positions, whereas Granger (1984) adds an intermediate position.

[79] For which see e.g. Searle (1959) 141-143.

[80] Moreover, Granger (1984) 12-13 makes the implausible suggestion that Aristotle would not have recognized this shift because of the ambiguity of differentia-expressions like πέζον which may be translated by substantives (pedestrian) as well as adjectives (footed). This suggestion, which is inspired by Ackrill (1963) 86-87, seems to put the cart before the horse in giving precedence to a modern language; besides, in this way there can be no conscious development on Aristotle's part.

[81] This is how Granger (1984) 13-23 explains Aristotle's statement that one should divide 'by the differentia of the differentia' (*Metaph.* VII.12 1038 a 9-10). However, this explanation starts from the assumption that the genus is eventually barred from the definition because of it, which is not in the text. In *Metaph.* VII.12 Aristotle only states that differentiae *entail* the genus they divide (cf. *Top.* VI.6 144 b 16-17) and therefore the *statement* of the definition may refrain from explicitly mentioning the genus. The division must proceed by the differentia of the differentia to achieve maximum unity in this kind of definition, which is still labelled

Since problems of chronology in this area deserve a more elaborate assessment than I can here provide, I confine myself to pointing out that in my opinion the respective positions of genus and differentia depend on the position granted to the species. First, the *divisive* aspect of the differentia, rightly associated with the genus, is emphasized. When the focus starts to move from the highest genera to the *infima species*, a discussion reflected in *Top.* IV.6 128 a 20 mentioned above,[82] the divisive aspect loses ground to the *constitutive* aspect of the differentia, which is more likely to be associated with the species and to be predicated in the essence.[83]

Q3 The sense of 'quality' as an accidental attribute of a substance should not be absent from our list, because in many interpretations it constitutes the opposite of the differentia. This sense is listed by Aristotle in *Metaph.* V.14 1020 b 8-12 as the third sense of 'quality'. Aristotle's description there mentions hotness, coldness, whiteness, and blackness without referring to the problem of essential attributes.

Q4 We should also add the use of quality in *Top.* IV.6 128 a 27 mentioned above: the differentia is called a 'quality' (ποιότης) of the genus, but not vice versa. Since the differentia is not properly predicated of the genus[84] it seems unlikely that Aristotle wants the differentia to be predicated of the genus in quality_p. It is clear what Aristotle has in mind though: a human being is not just an animal but a certain kind of animal, which calls for a further *specification* which is provided by the differentia. Yet this use of the term 'quality' is different from both the kind of predication and the category of being.

Q5 There is a further relevant use of ποιόν, which is employed with reference to genera and species. In *Cat.* 3 b 13-21 Aristotle dis-

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definition by genus and differentia. In this way a coherent series of genera of differentiae exists alongside the series of genera these differentiae entail. *De facto* entailment, which exists after the proper division has been made, is different from the kind of logical dependence involved in the determinable-determinate relation.

[82] See the remarkable article by S. Pines (1961) for possible influence of Xenocrates on this issue.

[83] De Rijk (1978) 105-107 has argued that the problematic position of the differentia shows that Aristotle did not succeed in telescoping all of Plato's Forms into the level of primary substance as secondary substances. On my view, however, the various statements concerning the differentia are indications of the development of that very telescoping procedure, and Aristotle was perfectly capable of assigning the differentia a position at the level of primary substance in the end.

[84] Cf. *Top.* VI.6 144 a 29-31. See Morrison *o.c.* 160 n. 29 on this issue.

cusses a possible characteristic of the category of Substance, namely that it signifies a 'certain this' (τόδε τι). In spite of appearances the characteristic does not hold in the case of secondary substances:

T34 But as regards the secondary substances, though it appears from the form of the name—when one speaks of man or animal—that a secondary substance likewise signifies a 'certain this', this is not really true; rather, it signifies a certain qualification, for the subject is not, as the primary substance is, one, but man and animal are said of many things. However, it does not signify simply a certain qualification, as white does. White signifies nothing but a qualification (ποιόν τι), whereas the species and the genus mark off the qualification with regard to substance—they signify a substance of a certain kind (ποιάν τινα οὐσίαν σημαίνει). (Arist. *Cat.* 3 b 13-21, transl. after Ackrill)

It sounds as if genus and species signify a quality in the same way the differentia does.[85] However, here the Greek ποιόν is used in yet another sense, designating a universal description, i.e. one that is applicable to many, as opposed to an individual, more specific, reference. In this respect, as Aristotle has pointed out in previous sections of the *Categories*, the differentia resembles genus and species: the differentia is said synonymously of species and individuals, i.e. both its name and its definition apply to its subjects.[86]

This use of ποιόν corresponds to the Platonic tendency to regard all manifestations of Forms as qualities or qualifications of matter.[87] This tendency is evident in Plotinus, e.g. when he says that each component of the bundle that makes up the sensible substance, when taken on its own, is said to be above all a quality, and the representation of an intelligible character.[88] Besides, Plotinus interprets the Stoic term

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[85] This source of confusion is also noted by Alex. *in Metaph.* 399.6-12, who does not discuss Aristotle's answer, though he does stress that the differentia is predicated in quality_p, whereas the genus is predicated in essence_p.

[86] *Cat.* 3 a 25-26, 3 a 33-b 9. Morrison *o.c.* 170 seems to distinguish synonymous predication from 'conferring both name and definition', which, however, comes to the same thing, cf. *Cat.* 1 a 6-7. *Cat.* 3 a 21-32 lists a point of agreement between differentiae and all substances: 'not being in a subject'. Cf. Porph. *Isag.* 11.7-8: '... *predicated of many things* differing in species'.

[87] On the relation between attributes and matter, cf. Porphyry, below p. 204-205. A striking example is Philo *Decal.* 31.4-5 μετέχω δὲ καὶ ποιότητος, καθ' ἣν ἄνθρωπός εἰμι, cf. Mansfeld (1992) 67 n. 22.

[88] See *Enn.* VI.3 [44] 16.1-9, 15.24-27; II.6 [17] 3.25-26. In this sense Plotinus can speak of accidents and qualities in themselves as forms, e.g. *Enn.* I.8 [51] 10.11; II.4 [12] 13.19; III.6 [26] 17.22-24; VI.3 [44] 6.30-32; VI.2 [43] 2.45-46; VI.6 [34] 5.26-29. See Wurm (1973) 256ff who also signals some divergence from Plato.

ἄποιος as applied to matter as equivalent to the Platonic ἄμορφος and ἀνείδεος, i.e. as referring to the lack of participation in a form.[89] As we have already seen, this is an important argument in his criticism of Stoic materialism: matter cannot be body because body is a form and matter is ἄποιος and hence ἀσώματος.[90] Finally, a striking example of Q5 is found in Philoponus: 'Furthermore, Plato called the dyad 'large-and-small' because matter receives quantity first of all qualities (*sic*), for first it is quantified and becomes three-dimensional'.[91]

2 Aristotle on the differentia

Before moving on to the views of the ancient commentators it may be helpful first to try and solve the problem of the categorial status of the differentia from Aristotle's point of view. It is surprising that Aristotle did not discuss the issue at all, and any interpretation of Aristotle will have to account for this discrepancy between Aristotle and his commentators.

If we focus on the technical usage of 'quality' and firmly distinguish between kinds of predication and categories of being, it seems possible to give an answer to the question what Aristotle's view of the categorial status of the differentia may have been. To some extent I agree with Morrison, who plausibly argues for what he calls a pluralist interpretation: the fact that something is a differentia does not in any way determine its classification in a category of being, so that the differentia may belong to any category whatsoever, whether it be the same as the category the genus it determines belongs to, or different from it. After all, being a differentia denotes a relation, and not one of the intrinsic properties Aristotle uses to characterize his categories of being, and which determine that classification.[92]

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[89] As Graeser (1972) 15 remarks. Cf. Plot. *Enn.* VI.9 [9] 7.12-16, I.8 [51] 10.1-16.

[90] See above, Chapter 2 p. 109 arg. 1.

[91] Philop. *in Phys.* 93.6-7: ... εἶτα ἐπειδὴ τῶν ἄλλων ποιοτήτων πρῶτον ἡ ὕλη δέχεται τὸ ποσὸν (πρῶτον γὰρ ποσοῦται καὶ γίνεται τριχῇ διαστατή), διὰ τοῦτο τὴν δυάδα μέγα καὶ μικρὸν ἐκάλεσεν ὁ Πλάτων.

[92] Cf. Morrison *o.c.* 170. When we think along these lines, we should probably say that a definition of a differentia *as such* (i.e. as a relative) should employ relatives as differentiae. Porphyry's definition ('a differentia is predicated in quality$_p$ of many things differing in species') in fact denotes a relation. However, it seems possible to differentiate between a definition of the *divisive* differentia in relation to its genus (a relation which is accidental to the genus if the differentiae are taken one by one), and a definition of the *constitutive* differentia in relation to its species (a

However, one wonders what is left of the problem of the categorial status of the differentia if the 'pluralist interpretation' is correct. As Morrison notes, there is simply no relation between being a differentia and belonging to a category. Nevertheless he seems to believe that the question itself is still a sensible one. But why then did not Aristotle discuss this question in any form? I would argue that the question is not correctly put, and a crucial Aristotelian text, *Topics* I.9, seems most appropriate to show this.

In *Topics* I.9 Aristotle distinguishes ten kinds of 'predication':[93] in essence (τί ἐστιν, οὐσία), quality, quantity etc. From Aristotle's examples it is clear that these kinds of predication differ from the categories of being as introduced in the *Categories*, in the following way:

T35 It is self-evident that he who indicates the essence of something (ὁ τὸ τί ἐστι σημαίνων), indicates sometimes a substance, sometimes a quality, and sometimes one of the other categories. For when a man is put before him and he says that what is put before him is a man or an animal, he states the essence (τί ἐστι λέγει) and indicates a substance (οὐσίαν σημαίνει); but when a white colour is put before him and he says that what is put before him is white or a colour, he states the essence (τί ἐστι λέγει) and indicates a quality (ποιὸν σημαίνει). Similarly, when a magnitude of a cubit is put before him and he says that what is put before him is a magnitude of a cubit, he will be stating an essence (τί ἐστιν ἐρεῖ) and is indicating a quantity (ποσὸν σημαίνει). Similarly with the other [kinds of predication]; for each of such things, both if it itself be asserted about it and if its genus be asserted about it, indicates an essence; but when it is asserted about

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relation which is essential to the species). Nevertheless, since division and constitution are two aspects of the same function, it seems preferable to speak of one differentia instead of two. The two relations are of course distinguished in the ancient definitions of the differentia: Porph. *Isag.* 11.7-8 speaks of the relation with the species ('the differentia is predicated in quality$_p$ of many things differing in species'), 11.18-19 of the relation with the genus ('the differentia by nature separates the things that belong under the same genus'). Cf. Dex. *in Cat.* I 31, Simpl. *in Cat.* 54.24ff.

[93] I follow the recent literature (see n. 95 below) in speaking of 'the kinds of predication' as a translation of τὰ γένη τῶν κατηγοριῶν. However, I do not wish to exclude the possibility that Aristotle's text can be understood without having recourse to the technical (and perhaps anachronistic) notion of predication involving a sentence with subject and predicate. For such an interpretation, which interprets the categories and the γένη τῶν κατηγοριῶν as names, see De Rijk (1978) esp. 101-107. Hence my use of the term 'predication' should be regarded as neutral in this respect. For my present purposes it is not necessary to decide this issue. As far as I can see now, the difference between the two kinds of categories—which is important for my argument—remains on any interpretation of *Top.* I.9.

> something else, it does not indicate an essence but a quality or quantity or one of the other categories. (Arist. *Top.* I.9 103 b 27-39, transl. Forster [1960], slightly modified)

The structure of Aristotle's argument is clear: he enumerates three examples in which something is identified by either its species or its genus. Each time the assessment of the identification is preceded by an explicit introduction of the subject involved under a certain aspect: '*when* a man, a white colour, a magnitude of a cubit is put before him and he *says* (φῇ) that what is put before him is a man, a white colour, a magnitude of a cubit ...'. These phrases suggests that the assessment in some sense depends on this introduction. Indeed, the white colour may be the colour of a man, but the introduction ensures that our attention is not directed to the man as such, but to a particular aspect of his, his whiteness. Only then is it possible to state the essence of that particular feature without confusion.

Though in all examples Aristotle speaks of *stating* (λέγειν) the essence, he makes clear that each time he is *indicating* (σημαίνειν) a different kind of entity.[94] No doubt the words οὐσία, ποιόν, ποσόν etc. as objects of *indication* refer to the categories familiar from the *Categories*. The kinds of predication τὶ ἐστιν, ποιόν, ποσόν etc. are to be clearly distinguished from the categories.[95] Whatever is put before one, and whatever one chooses to call it, one may ask two different questions: (1) what kind of predication is involved; and (2) to what category does the entity referred to belong.

As stated earlier, the examples of text T35 aim to preclude any confusion between the two questions. Still, how does Aristotle determine the answers to these questions, if the answer to the first does not entail the answer to the second? This is where the introduction comes in. When something white is put before you one thing immediately becomes clear: (1) whiteness is the issue now, because the subject is introduced as something white, whether it be a pigeon or a heap of snow. Subsequently, you say 'that is a colour' (not a bird nor something six feet high). What kind of predication is involved? Given (1),

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[94] Though the alternation of λέγειν and σημαίνειν in the examples is telling, the use of these terms is not strict: at 103 b 25-27, 37-39 Aristotle speaks of *indicating* the essence, quantity, quality or one of the other kinds of *predication*.

[95] In recent times the distinction between the types (or: categories) of predication and the categories of being (or: metaphysical categories) has been highlighted by Ebert (1985), Frede (1987), Morrison (1993) 148-149. Most ancient commentators did not make this distinction, cf. e.g. Lloyd (1990) 94.

'that is a colour' means that you predicate 'colour' of 'something white'. As always, knowledge of the divisions of nature is presupposed, so you know that colour is the *genus* of whiteness. Since the genus is predicated in essence$_p$, this is the kind of predication involved.

For the answer to the second question we must start all over again. The subject is introduced as something white. What kind of entity is something white? In other words, what category does it belong to? Before answering this question, some elaboration of the nature of the categories is required. It is common knowledge that the ancient discussion about the categories distinguished three options: the categories classify terms, or entities, or concepts. The Gordian knot was cut by accepting a wise compromise: the categories classify entities inasmuch as they are designated by terms through concepts. In more recent times De Rijk has convincingly shown the relevance of the condition 'inasmuch as they are designated by terms' for the understanding of Aristotelian (and Platonic) philosophy.[96] Naming, or categorization, is a semantic activity which precedes all predication and should be evaluated on its own terms. Naming is sufficient to indicate the category of being under discussion. If something is designated as 'white' it is *therefore* to be ranked under the category of Quality, regardless of the fact that whiteness always inheres in something else, whether that be a man, a pigeon or a heap of snow. The name directs the attention to the feature under discussion and at the same time excludes other aspects from focus. Only in this way is it understandable that for Aristotle a slave belongs to the category of Relation (*Cat.* 6 b 28-30): because someone is called 'slave' his ontic position is to be assessed *qua* slave, i.e. inasmuch as he has a relation to a master. Moreover, that relation is *essential* to the *slave*, though not of course to the human being involved—but we did not have him put before us as a human being, but as a slave. In the same way being a colour is *essential* to *something white*, though it is not to the pigeon—but we did not have it put before us as a pigeon, but as something white.[97] It is clear why, in

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[96] See De Rijk (1980, 1988), and De Rijk (1986) Ch. 13-16 concerning Plato. Anscombe (1961) is unsatisfactory inasmuch as she evaluates all of Aristotle's logic and semantics in terms of predication only.

[97] Note that Amm. *in Cat.* 32.1ff., Philop. *in Cat.* 42.10ff. show they are aware that the choice of differentiae depends on the division chosen. For the relativity of the notions of genus, species, and differentia in Aristotle's biological divisions see Balme (1962), Pellegrin (1986), and G.E.R. Lloyd, *Methods and Problems in Greek*

all areas of his philosophy, Aristotle emphasizes the need for proper naming, and even suggests that new names be invented to focus on aspects not clearly envisaged so far.[98]

Let us now return to our second question: what kind of entity is something white? What we have put before us is something white, and insofar as it is designated as such we should no doubt classify it in the category of Quality, whatever it may be from other points of view. Therefore the predication 'that is something white' signifies a quality, regardless of what is predicated of it. Hence, the answers to both questions ultimately depend on the way in which the subject under consideration is introduced at the start of the argument. The kind of predication is inferred from the relation between the predicate and the subject as it was introduced; the category of being is derived directly from the way the subject was introduced, regardless of the predication; for naming is prior to predication.

I believe these distinctions may serve to shed new light on the problem of the differentia. The initial question was: 'What category does the differentia belong to?' If we translate this question into the terminology of *Topics* I.9 the result is: a differentia is put before us and we say 'that is a differentia'. Since for the moment only our second question is relevant[99] we need to see what category something belongs to *inasmuch as it is a differentia*. At once it is clear that the usual answer to this question is not available: a differentia as such is not a kind of being; 'differentia' is only the name of an element in the definition, to be distinguished from the genus it divides, and the species it constitutes. 'Differentia', as well as 'genus' and 'species', are logical place-holders, variables to be filled by all kinds of entity without being entities in their own right.[100] They are at one remove from the world of being and not themselves part of it. It is not a coincidence that the examples in *Top.* I.9 all employ terms designating specific kinds of being: man, animal, white, a magnitude of a cubit—only *they* can be classified as beings.

Science, Cambridge 1991, 1-7 for a convenient survey of recent research on this issue.

[98] E.g. Arist. *Cat.* 6 b 36-7 b 14. On relations see *Cat.* VII and *Top.* 124 b 32-34: relations influence naming.

[99] When dealing with a true differentia, we are concerned with a predication in the essence$_p$.

[100] Cf. Mansfeld (1992) 88, who contrasts Sen. *Ep.* 58 where genera and species are also treated as really existing things.

A similar procedure is found when Aristotle tells us that genera must belong to the same *divisio* as their species: 'If the species is a substance, so is its genus; if the species is a quality, so is its genus; for instance, if white is a quality, so also is colour.'[101] Again, the example makes clear that the actual *divisio* (or category) a species and its genus belong to, can only be determined from a particular instance of a species (e.g. white), not from being a species or a genus *as such*. The terms 'genus' and 'species' only serve to enable a general characterization of the relations involved.

Ancient and medieval philosophers recognized the special status of terms like genus and species.[102] They encountered the problem in the context of *Cat.* 1 a 10-12: 'Whenever one thing is predicated of another as of a subject, all things said of what is predicated will be said of the subject also.' But, it was objected, 'genus' can be said of 'animal', but not of 'man' so Aristotle's statement cannot be correct. The ancient commentators produced two ways out of this dilemma: some chose to distinguish terms of first imposition ('man', 'animal') from terms of second imposition ('genus', 'species') and claimed that Aristotle's rule applied to words of first imposition, because only these were familiar to the common people for whom the *Categories* was supposed to have been written.[103] Others pointed out that in the *Categories* predication of a subject (καθ' ὑποκειμένου) always refers to essential predication. This, they said, rules out predicates like 'genus' and 'species', because they do not signify characteristics which are essential to their subjects.[104]

These considerations show, I suppose, that Morrison's pluralist interpretation is perhaps not the correct answer to the question 'To what category does the differentia belong?'. On Aristotle's strict terms that question makes no sense because 'differentia' does not denote a kind of entity such as he had classified in his *Categories*. Therefore, I take it, Aristotle did not consider this question, as he did not consider the question to which category a genus or a species belongs *as such*. He did of course classify genera and species of substances in the category of substance. But there can be no doubt that in those cases Aris-

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[101] *Top.* IV.1 121 a 7-9.
[102] Cf. Lloyd (1971).
[103] Dex. *in Cat.* I 27 26.13-27.2, cf. 15.16-22.
[104] 'Genus' or 'species' are not predicated in the essence, Porph. *in Cat.* 81.16-22, Dex. *in Cat.* 26.17ff, Amm. *in Cat.* 31.9ff, Philop. *in Cat.* 38.31ff.

totle meant that *each instance* of a genus or species of Substance (i.e. each individual belonging to the extension of the terms 'genus' and 'species') belongs to the category of Substance.[105] In the same way *each instance* of a differentia can be classified in a category.

Therefore Morrison's interpretation is certainly the right answer to a different question: 'To what category does the range of possible contents of the variable 'differentia' belong?' Indeed, since all kinds of entity may serve as differentia, each differentia *taken in itself* (and designated accordingly as e.g. 'rationality', 'hotness') may belong to any category whatsoever, but we should realize that it does not belong to this category *because it is a differentia* (and may be designated as such).

The distinction between the two questions does not always seem to have been clear for commentators on the issue. We shall see that the category of the differentia is sometimes determined by means of characteristics of the differentia *as such*, sometimes by means of characteristics of a dominant group of instances of differentiae, especially differentiae of Substances, which happen to be mainly qualities.

3 The ancient commentators on the differentia

Though Morrison's work is extremely valuable as a philosophical discussion of the problems at hand, it is unsatisfactory so far as the ancient commentators are concerned. His treatment is not exhaustive and he does not aim to clarify their theories, or their motivation. Most importantly, he seems to have overlooked Alexander's so-called *Quæstio de differentiis specificis* which has been preserved in Arabic, along with a related passage in Alexander's commentary on the *Metaphysics*. Therefore I here intend to provide a historical complement to Morrison's work. However, within the framework of this study I cannot but

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[105] As he did when formulating the general rule that a genus always belongs to the same *divisio* as its species, see above p. 193.—It has often been pointed out that the *Categories* does not explicitly discuss the status of genera and species in other categories than Substance. No doubt the explanation for this fact is to be found in Aristotle's Academic environment at the time: in Platonism (as Aristotle saw it) genera and species *as such* were considered separate entities, or, in Aristotle's terms: substances. Although (or perhaps because) their subordination to individual substances already constituted a major revolution, the lack of emphasis on genera and species in other categories might betray this background. The uncertain position of the differentiae of substances in *Cat.* V may be seen to correspond with the *Topics*' association of the differentia with the genus, whose greatest independence is achieved when regarded as an indispensable part of the definition.

confine myself to the issues that are relevant for explaining and assessing Philoponus' position in *Contra Proclum* XI.5.

The commentaries will be discussed in the order in which ancient students would encounter them: first the issues concerning the *Categories,* then the *Metaphysics*. In this way we exclude the possibility that a gradual exposition for didactic purposes hampers our understanding. For the same reason the aporiai concerning the *Categories* are treated in the order in which they occur. As a result, the commentators are not treated in chronological order.

If the solution to the problem is to be found along the lines indicated above, we may now ask why the commentators discussed this problem and what their solution was. The fact that we are dealing with commentaries brings along special difficulties in finding that answer: all information we have is linked to specific passages of Aristotle's—who did not discuss the issue as such. However, we cannot be sure beforehand that these passages are the reason why the problem arose, for instance because they presented textual difficulties. All we know is that they serve as the *occasion* for discussions of the differentia. Furthermore, our information is limited: we do not possess all commentaries each commentator wrote. It would be convenient, for instance, if we were able to look into the *Categories* commentary by Alexander, and the genuine second half of his *Metaphysics* commentary. Porphyry's larger commentary on the *Categories, Ad Gedalium*, or Simplicius' interpretation of the *Metaphysics* would be helpful too. Nevertheless, what we are looking for is an indication of why the question may have gained so much importance that almost every commentator cared to discuss it. Only for lack of such indications may we be satisfied with assuming the existence of a merely exegetical tradition without philosophical backbone.

Fortunately, we need not despair: in the first place Alexander and Syrianus both provide a clear connection between the issue of the categorial status of the differentia and the question whether there is a genus of Being. Since this question kept (Neo)platonists and Peripatetics divided forever, there seems to have been sufficient reason to keep the issue alive.[106]

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[106] Cf. Mansfeld (1992) 128: 'This late parallel (Simpl. *in Cat.* 77.15-78.3 who is discussing the same problem) eloquently attests the vitality of the conflicting traditions'.

Other incentives were the aporiai compiled by Lucius and Nicostratus. Apparently, these critics (1st century AD) attacked the coherence of Aristotle's text of the *Categories*, assembling both textual and philosophical problems.[107] Three aporiai bear directly on our issue and will serve to articulate our subsequent discussion.

One of their aporiai questioned Aristotle's so-called definition of accidents as 'being in a substrate, not as a part' (*Cat.* 1 a 24-25) because it would not account for essential constituents of substance like differentiae; for differentiae cannot be regarded as accidents nor as substances. In this framework every answer to the question 'Are differentiae accidents or substances?' entails a classification of the differentia in either the category of Substance or one of the remaining nine categories.

The second problem concerns *Cat.* 1 b 16-24: first Aristotle states that *all* differentiae of different genera[108] which are not subordinated one to the other are different in species (1 b 16-17). Further below he affirms that there is no reason why (at least) *some* subordinated genera would not have the same differentiae, since the differentiae of the higher genera are predicated of the lower (1 b 20-24). In some cases these two statements are contradictory: for e.g. the differentia 'biped' occurs in the division of flying, swimming as well as walking animals which are genera that are not subordinated one to the other; yet they share the same differentia. Since this problem concerns the first mention of the terms genus and differentia in the *Categories* the commentators seize the opportunity to provide a summary introduction of these terms based on Porphyry's *Isagoge* (which the students are supposed to have studied before embarking on the *Categories*). These introductions sometimes contain valuable indications as to the distinction between divisive and constitutive differentiae, and their ontic status.

The third question is discussed at *Cat.* 3 a 21-32 where 'not being in a substrate' is rejected as a proprium of substance because differentiae share this characteristic. This passage may be thought to exclude differentiae both from the 'definition' of accident in 1 a 24-25 ('to be in a substrate, not as a part'), as well as from the category of Substance with which they are now contrasted. This passage gave rise to the most elaborate discussions of the categorial status of the differen-

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[107] See n. 30 above.

[108] Reading τῶν ἑτέρων γενῶν at 1 a 16 with Ross, Ackrill, *pace* Minio-Paluello (OCT).

tia. Part of the solution may be found in the final paragraph 3 a 29-32 (whose exact position in the text has always been disputed), where Aristotle emphasizes that parts of substances are substances, even though they may be said to be 'in' their wholes—these parts were explicitly barred from the 'definition' of accident. However, if 'part' is not understood as referring to bodily parts (head, hand etc., see *Cat.* 8 b 15-16) but to essential parts of substances (one of the senses of the phrase συμπληρωτικὰ τῆς οὐσίας)[109] the differentia might be considered as such a part, and be a substance after all.

Since every Neoplatonic commentator seeks to show the internal coherence of the work he is explaining, as well as the coherence of Aristotle's philosophy as a whole and Aristotle's agreement with Plato, every aporia raised cried out for an answer. Porphyry, who saw the potential of the *Categories* for Neoplatonic thought, is said to have accomplished the enormous task of answering each and every one of the aporiai in his monumental *Commentary ad Gedalium*, now lost. Simplicius explicitly notes the value of the aporiai for the development of philosophy, even when they were misguided or unfair.[110] Philoponus' application of the solution to the problem of the categorial status of three-dimensionality as an essential feature of body certainly confirms Simplicius' assessment.

As soon as the importance of this set of problems is realized, the commentators apply all their ingenuity to solving the aporiai. We shall see that Ammonius and Philoponus established a new line of interpretation. Since this new interpretation was inspired by the earlier Neoplatonic commentary tradition to a considerable extent, we shall have to include that tradition in our discussion.

In general, all Neoplatonic commentators understand the problem of the categorial status of the differentia primarily as the question to which category of being it belongs, not to which kind of predication it belongs. Nevertheless, this distinction seems less relevant to them than to us, for all confuse the categories of being and the kinds of predication, or at least infer the category of being involved from the kind of predication they believe to be at issue when a differentia is predicated. Furthermore, they use arguments which address the position of the

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[109] Cf. Ellis *o.c.* 81-82 who discusses Alexander's distinction of contributing (συντελοῦντων) to existence (εἶναι) and contributing to being a τόδε τι, Alex. *Quæst.* I.8 18.8-24.

[110] Simpl. *in Cat.* 1.18-2.9.

differentia as such alongside arguments which are based on the characteristics of differentiae of substances or another set of exemplary differentiae. Hence they do not make the distinction outlined in the previous section.

The attitude of the ancient commentators is markedly different from that of most modern commentators in that they seek to harmonize the entire Aristotelian corpus. They hardly speak of development in Aristotle's thought. At most they recognize a motive for gradual exposition: a more 'introductory' work like the *Categories* only skims the surface of problems to be tackled more thoroughly in, for instance, the *Metaphysics*. With regard to the issue of the differentia this attitude entails that, if possible, *all* of Aristotle's statements concerning differentiae should be combined into one unitary view, even if not all relevant questions are discussed in a commentary on the *Categories*. Since modern commentators all agree on a substantial development of Aristotle's view of the differentia, we may gather that the ancient commentators were in dire straits. This may partly explain why they were vulnerable to the confusions described above: they could not do without 'creative exegesis' because of their purpose of unification of Aristotle's thought.

3.1 First aporia: substance versus accident (Cat. 1 a 24-25)

In the fifth chapter of the *Categories* Aristotle distinguishes substance from the other categories by means of the criteria of 'not being in a substrate' and 'not said of a substrate' (*Cat.* 2 a 11-13). As Aristotle explained earlier, 'to be in a substrate' means 'to be in something not as a part, and incapable of existing separately from that which it is in' (*Cat.* 1 a 24-25). This criterion concerns existence: either a given entity exists in its own right (substance) or it needs something else, i.e. a subject, to exist in (the other categories). Since this criterion applies to all non-substance categories it came to be seen as a kind of definition of accidents.[111] However, the notion of accident is absent from the *Categories*, and should not be imported from later work of Aristotle's. For whether or not a given attribute (whiteness, rationality) is essential

[111] E.g. Amm. *in Cat.* 26.30-27.8 who speaks of an analogue of definition, with 'in a subject' as genus, and 'not as a part' and 'incapable of existing apart from that which it is in' as differentiae; cf. Philop. *in Cat.* 32.2-6; Simpl. *in Cat.* 45.23-24 (ὑπογραφή rather than a definition), 46.4-5 (genus and differentia); David (Elias) *in Cat.* 150.15-17. Cf. Matthews (1989) 95, 102-104 for a discussion of the relevance of this passage for the understanding of Aristotle's metaphysics.

or accidental, it is true to say that it cannot exist on its own in the way a substance can. In other words, being a member of, e.g., the category of Quality does not entail being an accident.

On the other hand, it is often true that entities which belong in one of the non-substance categories (because they depend on a primary substance for their existence) are predicated of a substance in one of the non-essential kinds of predication. This makes them accidents according to the definitions of *Anal.Post.* I.4: (D1) they are not part of the definition of their subject, (D2) nor does their subject occur in their own definition. Often, too, they fulfil two other definitions of accident given by Aristotle in *Top.* I.5 102 b 4-7. For (D3) they belong to their subject without being definition, proprium or genus, and (D4) they may belong and not belong to one and the same subject.[112] Finally, in the central books of the *Metaphysics*, where Aristotle is concentrating on identifying the primary substance, entities from non-substance categories nearly always appear as accidents of substance in one of the senses noted in this paragraph. As usual, in all these cases predication as an accident is complemented by *being* an accident.

However, as we have already seen, there are some important exceptions, which interest us here. Genera and species of non-substance categories themselves belong to the same non-substance categories as their subjects, but they are predicated in essence$_p$; therefore they seem to run counter to definition D1. Differentiae, though no doubt essential to substances inasmuch as they are part of their definitions (see D1), are said to be predicated of the species in quality$_p$ when taken separately. Moreover, some accidents, like the whiteness of snow, or the blackness of the raven, accompany their subjects as long as they exist and therefore seem to violate definition D4. In the ancient commentators these qualities are discussed under the name of inseparable accidents, and they are distinguished from differentiae by the fact that they allow intension and remission without the consequence of essential

[112] Following Aristotle's examples of sitting and whiteness, the second definition is usually taken to mean that accidents may belong and not belong to the subject under discussion. However, Ebert (1977, and forthcoming) has pointed out that the phrase ὃ ἐνδέχεται ὑπάρχειν ὁτῳοῦν ἑνὶ καὶ τῷ αὐτῷ καὶ μὴ ὑπάρχειν (*Top.* I.5 102 b 6-7) may also mean 'which may belong or not belong to one and the same subject, whatever that may be', i.e. regardless whether that is the subject under discussion or not. I am grateful to Richard Sorabji for relaying to me a draft of Prof. Ebert's forthcoming paper.

changes, while differentiae do not.[113] Finally, we have seen in the case of the slave that the essence/accident distinction may vary according to the point of view we choose: the relation to a master is essential to the slave as such, but accidental to the same person when regarded as a human being. These cases should deter us from regarding *Cat.* 1 a 24-25 too hastily as a definition of *accidents* rather than as a criterion for belonging to a non-substance category.

On the principles outlined earlier in this chapter, none of these cases should be problematic. Each entity belongs to a category *before* it is predicated, whether it is predicated as an accident or a differentia; the kind of predication involved in each case does not interfere with its category. Therefore we need not feel embarrassed when non-substance genera and species are predicated in essence$_p$ of their species and individuals. In the case of differentiae this difficulty has already been clarified above. For the case of inseparable accidents an elegant solution has been proposed. Ebert has explained definition D3 as 'that which may belong or not belong to at least one entity, whatever that may be (ὁτῳοῦν ἑνί)'.[114] In other words, if there is one possible subject to which the predicate may belong or not belong, it is an accident, whether that subject is the one under discussion or not.[115] On this interpretation white is an accident of snow, even though snow will never be found without its whiteness, simply because something else, e.g. a wall, may lose the whiteness it once acquired. The case of inseparable accidents thus illustrates the need for the indefinite pronoun (ὁτῳοῦν): to realize that we are dealing with accidents in these cases too, we must look for another subject than the one at issue.

For many commentators, however, these cases proved to be far from simple. As soon as Aristotle's phrase 'to be in something, not as a part, and incapable of existing separately from what it is in' is regarded as a definition of *accidents*, differentiae and inseparable accidents come to be regarded as a threat to this definition, and therefore to the distinction between substance and accident. The problem is most eloquently put in Simplicius' account of Lucius' aporia regarding this definition:[116]

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[113] E.g. Porph. *Isag.* 9.7-23; Dex. *in Cat.* 48.11-19; Simpl. *in Cat.* 98.13-19.

[114] See n. 112 above.

[115] Note, however, that Arist. *Top.* 144 a 23-27 refers to the same rule substituting τῷ ὁριζομένῳ for ὁτῳοῦν ἑνὶ καὶ τῷ αὐτῷ. See further below, p. 202 n. 119.

[116] Simpl. *in Cat.* 48.1-11; cf. Plot. *Enn.* II.6 [17], VI.3 [44] 5.24-30 (who seems to accept the difficulty); Dex. *in Cat.* I.22 23.17-24.18. Cf. Mansfeld (1992) 121.

T36 Lucius and his followers also raise a difficulty about calling what is in a subject what is 'not as a part'. "For if we call the completers of being (τὰ συμπληρωτικὰ τῆς οὐσίας) parts of it", they say, "and colour, shape, and size complete the being of the sensible body in general, and, generally, quality and quantity[117] (for there could be no body without colour and shape), while whiteness and coldness complete the being of this body, e.g., snow, it is necessary to make a choice: either not to say that these things are in a subject or that it is not right to assert that 'what is not as a part' is one of those things in a subject. And how, generally, can completers be said to be in a subject? For Socrates' shape is not in Socrates as in a subject, but if anything, things which enter already completed things from outside would be in them as in a subject." (Simpl. *in Cat.* 48.1-11, transl. Ellis [1994] 83-84, slightly altered)

According to Lucius, anything contributing to something's being (εἶναι) is to be considered as a part of it. Since bodies cannot exist without some colour, shape, and size or other, these characteristics are parts. Hence either (a) they are not in a subject according to Aristotle's definition, or (b) the clause 'not as a part' is inappropriate if these characteristics are in a subject after all. The difficulty is primarily directed at the correctness of the definition: either notorious members of non-substance categories (which are regarded as accidents) turn out not to be in a subject; or the phrase 'not as a part' is mistaken.

Apparently, the expression τὰ συμπληρωτικὰ τῆς οὐσίας is to be understood as the completers of *being* in general, i.e. existence as well as essence, rather than completers of essence alone. For only generally speaking bodies cannot exist without colour, shape, and size, since they may well do without some particular colour or shape they might happen to have. Lucius' example of a particular body picks out qualities which belong to snow as long as it exists, since only these seem to be indispensable for its existence. Socrates' shape is a less convincing example from that perspective, though it is quite obvious that it enters its subject when Socrates is already completed, which rules out that it is a completer of Socrates' οὐσία (i.e. existence and, *a fortiori*, essence).

Ellis has suggested that 'the problem of substantial qualities' had already been solved by Alexander in his *Topics* commentary, and he

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[117] Note that Simplicius' account of Lucius as well as Dexippus' anonymous account speak of quantity as generally indispensable, in the same sense as Philoponus did with regard to quantity in his *Corollary on Place*, see T29, p. 174 above.

wonders why other commentators did not follow him.[118] Let us examine this question. In *in Top.* 49.10ff Alexander criticizes our fourth definition of accident (D4), 'something that may belong or not belong to one and the same thing' because *inseparable* accidents would not qualify as accidents in this way. Alexander goes on to show that inseparable accidents, though invariably present in their subjects, are concomitants of matter. In this way Alexander secures their accidental nature while at the same time explaining their inseparability (matter is a constituent part of a composite substance). No doubt he was inspired by Aristotle's similar conclusion with regard to the characteristics 'male' and 'female' to which he seems to refer.[119] As a corollary, he expressly bars inseparable accidents from being 'completers of substance'; thus, I would say, he merely exposes some *alleged* completers of substance as being accidents of a deceptive kind. Consequently, Alexander notes that Aristotle's definition of accident as 'not being a completer of substance' (i.e. 'not being a part') truly applies to them (50.31-51.1). Perhaps he did so in response to Lucius' rather inaccurate use of the phrase συμπληρωτικὰ τῆς οὐσίας. At least he used Lucius' example of the whiteness of snow as a paradigm case of an inseparable accident.

Contrary to what Ellis's interpretation of these passages suggests, though, Alexander does not believe this account to apply to *all* completive qualities, including differentiae. He distinguishes sharply between inseparable accidents and differentiae, for he states:

T37 Furthermore, one can say that even if [inseparable accidents] cannot belong and not belong to these [subjects], they can belong and not belong to certain others; so everything that relates to some being in this way will be an accident. However, this is not true either: heat, which belongs to something in such a way that it can also not belong, is not an accident of fire. Again, the whiteness in the snow may be either its genus or definition or proprium; but none of these can be said of it. It

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[118] Ellis *o.c.* 88.

[119] See Alex. *in Top.* 51.5-6, *Mant.* 168.22-169.32 with Arist. *Metaph.* X.9 1058 a 29-b 25; cf. Lloyd (1962) 88-89. In this context, *in Top.* 50.11-14, Alexander for a moment considers the same interpretation of *Topics* I.5 102 b 6-7 that Ebert defends although he rejects it, see T37 below; cf. Ebert (forthcoming). The case of the differentia is precisely the reason why this interpretation is unacceptable to Alexander, as the sequel shows. As Ebert pointed out to me in correspondence, we do not know whether Aristotle regarded the hotness of fire as a *differentia* since he nowhere seems to define the elements in this way. The status of the qualities of the elements may very well have been a problem for Aristotle.

> is not a differentia either. For no colour seems to be a specific differentia of body. Such [accidents] seem to have something more than is the case with the other accidents, because they necessarily accompany matter and its qualities and affections, from which they derive their being. (Alex. *in Top.* 50.11-21)

Since Alexander draws a clear contrast between inseparable accidents and differentiae, it seems unlikely that the discussion about inseparable accidents that follows applies to differentiae. Moreover, we shall see below that Alexander wrote an entire treatise on the position of the differentia, stating among other things that differentiae of substances are themselves substances. Consequently, his account of inseparable accidents cannot be meant to rule out 'substantial qualities' altogether—on the contrary, he wholeheartedly accepted substantial qualities[120] as substances. As we have seen, ranking differentiae of substances with substances as their parts does not jeopardize the distinction between substance and accident; it merely applies it. In short, improving on Lucius' terminology, Alexander distinguished a contribution to being in existence (τὸ εἶναι ἐν ὑποστάσει) from a contribution to being this particular thing (τὸ τῷδέ τινι εἶναι).[121] The former applies to inseparable accidents and to the general need for bodies to have qualities and quantities; the latter applies more specifically to constituents, or completers of *essence* or *form* only. No doubt differentiae are among the latter. We can be certain that this distinction was taken over by the tradition.[122]

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[120] For the moment I take substantial quality in the sense of qualities which are substantial because they are differentiae of substances (see p. 223 under OP2).

[121] Alex. *Quæst.* I.8 18.8-24. Cf. Ellis *o.c.* 81-82.

[122] The distinction is already found in Plot. *Enn.* VI.3 [44] 15.17-19. After Porphyry it took the form of contribution to εἶναι versus οὐσία, or was phrased as the difference between belonging essentially (οὐσιωδῶς ὑπάρχειν) versus accidentally (κατὰ συμβεβηκός). See e.g. Dex. *in Cat.* 24.13-18: (not) contribute to substance = (not) to be a part = (not) to belong essentially (οὐσιωδῶς ὑπάρχειν) which implies being 'existents' (ὄντα); cf. Porph. ap. Simpl. *in Cat.* 48.23-24: 'rather it completes the essence as a part, and *is* the subject as being the essence'. In general it can be seen that οὐσία in συμπληρωτικὰ τῆς οὐσίας has shifted its meaning from *composite substance* to *essence*, while at the same time a shift has occurred from 'being' to 'belonging as a predicate', which we saw is implied by taking Aristotle's criterion of belonging to a non-substance category as a definition of *accident*.—Dex. *in Cat.* 48.7-10 denies that a differentia is a substance 'because it does not contribute to the existence (εἶναι) of a thing, but to its being of a certain quality (τὸ τοιόνδε εἶναι)'. He goes on to explain that τοιόνδε does not mean a separable accident like white, since the differentia is inseparable. Hence he seems to apply to

Plotinus is a more likely philosopher to have solved this aporia. In his treatise *On Substance, or on Quality* (*Enn.* II.6 [17]) he explicitly notes the absurdity that the same nature (e.g. whiteness) is completive in some cases (white lead) but accidental in others (swan).[123] Plotinus first assures us that we need not be bothered by the fact that a quality might be completive of a substance, if we regard the quality as being completive of a substance *of a certain quality* (i.e. kind).[124] Apparently, he is using quality in the sense of Q5 in order to support quality as a differentia, Q1. He goes on to suggest the same distinction of senses of 'quality' that Aristotle had made in *Metaph.* V.14. The initial aporia, however, is entirely transformed in Plotinus. For Plotinus only acknowledges substances in the intelligible realm, where the unity of actuality precludes actual composition by means of completers. Our limited mind can only grasp that unity by asserting different aspects, thus generating so-called differentiae. In the sensible realm there are no substances, and therefore no differentiae either. If qualities seem to be completive here, they are not really qualities but activities of intelligible forms (see Q5); accidental qualities (they alone may retain the name of 'quality') are only shadows and traces of those activities. In this way completive and accidental qualities turn out not to be of the same nature after all: the first are forms, λόγοι, activities; the second are their images and shadows. From this point of view the aporia dissolves into thin air—together, we should note, with the foundation for Aristotle's distinction between sensible substances and their accidents which the aporia was supposed to threaten.

Plotinus' pupil Porphyry, however, did not follow this radical criticism of Aristotelian ontology, and therefore he had to solve Lucius' aporia. Simplicius and Dexippus have preserved Porphyry's answer, which he ascribes to the Stoics and the elder philosophers. He distinguishes two senses of 'subject'. Prime matter is the primary sense of 'subject': all colour, shape and size is in prime matter as 'in as subject, not as a part and incapable of existing separately from it'. From this point of view Lucius' problem simply cannot arise. The commonly or peculiarly qualified entity (τὸ κοίνως ἢ ἰδίως ποιόν, in Aristotelian terms: the composite substance) is the second sense of 'subject': not all

differentiae Aristotle's warning of *Cat.* 3 b 15-21 concerning genera and species signifying ποιόν τι. Cf. Simpl. *in Cat.* 98.6-9.

[123] *Enn.* II.6 [17] 1.18-42.

[124] *Enn.* II.6 [17] 2.2-7.

colour or quality is 'in' this kind of subject but only when they are not completers of substance. E.g. white in wool is in wool as in a subject, while it is in snow as a part; heat is part of the οὐσία of fire, though it is in iron as in a subject. The latter example is explained from the fact that heat both comes to be in and vanishes from the iron without the destruction of the iron—an appeal to definition D4 of an accident. At the level of composite substance Porphyry accepts the fact that the same quality may be accidental to some substances, but parts of others.[125] He can only save Aristotle's definition because he has recourse to prime matter to be able to consider constituent qualities as accidents too, and not as parts. This move is rather weak since he himself implicitly acknowledges that prime matter is not the subject at issue here: the primary subject is substance and in the *Categories* substance refers to *composite* substance.[126] Nevertheless, Porphyry has found a way of showing in what sense Aristotle's 'definition of accident' is correct in spite of the difference between essential and non-essential qualities, and in spite of the fact that constituent qualities are parts, and not accidents, of composite substance.

Porphyry's introduction of matter in this context is significant. As a Platonist, Porphyry is prone to look upon prime matter as if it were the Timaean receptacle: one unique substratum for all forms, to which all forms are accidental because matter itself lacks any essential characteristic whatsoever. Moreover, in this way he retains something of the Plotinian emphasis on the qualitative nature of the sensible images of forms. In Aristotelian terms, however, each form is accidental because it is not a part of the definition of matter (= definition D1). Form may also be thought to be in matter 'as in a subject' because it is not a part of matter and because it is incapable of existing without it. Ellis has rightly drawn attention to the fact that Porphyry's solution indeed implies that forms are in prime matter as in a subject.[127] This interpretation is confirmed by Porphyry's extant commentary on the *Categories* where he explicitly identifies the 'in' of 'in a subject' with the 'in' of 'form in matter'.[128] Since Porphyry used a definition of *accident* in

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[125] So does Dexippus *l.c.*

[126] See Porph. *in Cat.* 88.16-17, 89.27-33; cf. Dex. *in Cat.* 24.12-13.

[127] Cf. Ellis *o.c.* 85-86.

[128] Porph. *in Cat.* 78.6-7; compare Boeth. *in Cat.* 173 BC.

order to describe being in a subject,[129] this amounts to demoting Aristotelian forms to the status of accidents of prime matter—noteworthy, though hardly surprising for a pupil of Plotinus.[130]

This non-Aristotelian interpretation was adequately checked by Iamblichus and the commentators after him who carefully distinguish the 'in' of 'in a subject' from the 'in' of 'form in matter'. One of the reasons they offer is that that which is in a subject *derives* its being from that which it is in, whereas form *grants* being to matter.[131] Lucius had already said that things in a subject enter their subject after its completion, and Alexander argued on more than one occasion that the subject of the accidents is a τόδε τι, and that matter obviously does not qualify as such.[132]

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[129] Porph. ap. Simpl. *in Cat.* 48.25-26 (a definition from his own *Isag.* 12.24-25); cf. the explicit identification of accident with 'to be in a subject' at Porph. *in Cat.* 73.22, 75.8; Philop. *in Cat.* 28.16-18, 29.4-9; Simpl. *in Cat.* 44.12-17, 44.28-45.1.

[130] Porphyry's solution is an application of Plotinus' discussion *On Quality, Enn.* II.6 [17], which also pervades Simplicius' account of quality, *in Cat.* 206.1ff. Cf. also *Enn.* VI.3 [44] 3.7-8.

[131] Iambl. ap. Simpl. *in Cat.* 46.21-47.5 points out that Aristotle regards 'in a subject' as closely related (οἰκεῖον) to 'form in matter' in his list of senses of being 'in' something (*Phys.* IV.3 210 a 14-24, from which the lists in the commentators obviously derive). Iamblichus refers to 210 a 20-21 where Aristotle connects 'health in warm and cold things' with 'form in matter'. This text may also explain Porphyry's interpretation. Simplicius, as usual, agrees with Iamblichus; see Simpl. *in Cat.* 46.5-14, 47.7-28 for his own list of senses of 'in'. See further Amm. *in Cat.* 27.30-28.7, 29.5-17 (adding 'in time' and 'in a subject' as separate entries to Porphyry's list of nine senses, Porph. *in Cat.* 77.22-78.5); Philop. *in Cat.* 32.7-27 (eleven senses of 'in'), 34.7-35.9 (against form in matter, also because the form-matter analysis is beyond the scope of the *Categories*). David (Elias) *in Cat.* strikes a different note: at 150.28-29 he briefly suggests that 'form in matter' is excluded along with 'genus in species', whereas at 151.25-34 he argues with Porphyry that form is in matter as an accident, while adding that form and matter are each parts of the composite substance (and hence not accidents) though not parts of each other. Dexippus does not discuss this particular issue, though he does treat other problematic senses of 'in', *in Cat.* I.21, I.23-24. For Porphyry's choice (form is in matter as in a subject, *in Cat.* 78.6-7) see the main text. Note that Plot. *Enn.* VI.3 [44] 4.29-33, 5.10-14 already provides this ammunition against the aporia.—David's commentary has been edited in the *CAG* under the name of Elias (*olim Davidis*), but J.-P. Mahé in I. Hadot (1990a) Appendice II has convincingly shown that there is no reason not to attribute the commentary to David (*pace* Wildberg [1990] 49 n. 51), in agreement with all manuscripts as well as the Armenian tradition. I follow Hadot in writing David (Elias) in order to signal this re-attribution. For arguments that both David and Elias were pagan, not Christian, philosophers see Wildberg (1990) 42-46.

[132] See Ellis *o.c.* 76-83 who refers to Alex. *Mant.* 119.31-120.33, *Quæst.* I.8, I.17, I.26, II.11.—Porphyry, however, may have gathered from the *Timaeus* that it is

Porphyry's solution has been regarded as a more or less successful attempt to save Aristotle's categorial scheme.[133] I have already pointed out that all we know he is actually doing is giving a defence of the definition of accident as it stands. He accepts the existence of substantial qualities, though this is precisely the doctrine which is considered a threat to the categorial scheme because it would cut across the divide between substance and accident. The question is, however, whether the categorial scheme really is threatened by the existence of substantial qualities. Simplicius shows that it need not be so in his common sense assessment of Porphyry's solution:

T38 I believe it is reasonable to respond to this solution, that if only that which comes to be and vanishes is 'in a subject',[134] these two [criteria], 'in a subject' and 'not in a subject', will not comprise all categories any more. For if 'not in a subject' designates substances, and 'in a subject' [does] not [designate] all quality, but only supervening [quality], not all genera would be comprised.

Well, one should say that the qualities which do not supervene, but are completers of the substance, are parts of the substance, and are themselves substances and are taken together with substance: for the parts of the substance are substances according to Aristotle (*Cat.* 3 a 29-32). For that reason, perhaps, he did not call substance 'subject', but 'not in a subject', with a view to including such qualities as well. (Simpl. *in Cat.* 48.33-49.9)

If parts of substances are substances, completive qualities will have to be substances, whereas only supervening qualities are accidents. Simplicius even sees a possibility of understanding the phrase 'not in a subject' as if it already reckoned with completive qualities. He envisages the possibility that Aristotle could have contrasted 'in a subject' to 'subject', but that the philosopher chose 'not in a subject' instead so as to include things that are *neither* 'in a subject' *nor* themselves 'subjects', such as completive qualities. In this way Aristotle's distinction between substance and accident is not in the least in jeop-

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warranted to designate the receptacle as τόδε, for it does not suffer from the instability that characterizes the flux of instantiations of the Forms.

[133] Ellis *o.c.* 85: "But on the whole Porphyry can be seen as saving Aristotle's categorial scheme from Lucius' attack".

[134] This is one of the definitions of accident in Porphyry's *Isag.* 12.24-25: συμβεβηκὸς δέ ἐστι ὃ γίνεται καὶ ἀπογίνεται χωρὶς τῆς τοῦ ὑποκειμένου φθορᾶς.

ardy.[135] Of course Simplicius' interpretation turns on the application of Aristotle's statement that parts of substances are substances to this kind of parts. But Porphyry seems to have supported that application, since he himself calls differentiae essential qualities, i.e. parts of substances and therefore substances.[136] Even his master Plotinus seems to have subscribed to this rule.[137] Given the distinction between substance and accident, Porphyry and Simplicius agree that essential qualities are not accidents, but (parts of) substance.

This solution nicely illustrates how the later Platonists were able to incorporate Aristotle's categories. Wurm[138] has shown that Alcinous already introduced a twofold distinction: transcendent forms, or primary intelligibles (εἶδος χωριστόν, πρῶτον νοητόν) are opposed to immanent forms or secondary intelligibles (εἶδος ἔνυλον, δεύτερον νοητόν). On the other hand accidents as such, or first perceptibles (e.g. ποιότης, πρῶτον αἰσθητόν) are distinguished from immanent qualities or their possessors, or secondary perceptibles (e.g. ποιά, δεύτερον αἰσθητόν). Of course the immanent form depends on the transcendent form by means of genuine participation, but although one would expect a similar relationship to hold between quality and qualified, Wurm has noted in Simplicius a tendency to speak of the first perceptibles as things predicated (κατηγορήματα) rather than causes. In fact Simplicius is following the lead of Plotinus, who in his essay on quality (*Enn.* II.6 [17]) left room for accidental qualities in the sensible world only, and regarded their causes in the intelligible realm as substances, not qualities.

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[135] Ellis *o.c.* 70 n. 5 *ad finem* remarks that classifying differentiae in the category of substance does not jeopardize Aristotle's *categorial* scheme (his emphasis). I fully agree, but then there is no ground left to suggest that "to raise an accident, the three-dimensional, to the level of substance—as Philoponus did with his substantial quantity, the 'three-dimensional', or, as some maintained, to insist that there are qualities that are 'substantial', like the whiteness of snow" (*o.c.* 69) constitutes an attack on "the distinction between substances and non-substances, or accidents"!— Note, however, that Ellis believes that Porphyry thought of differentiae as being *neither* substances *nor* qualities, but something in between (*o.c.* 70 n. 5). That would be an attack on the categorial scheme, but a different one: the addition of an eleventh category. However I do not believe that this position was held by any of the commentators.

[136] Cf. Porph. *in Cat.* 95.22-96.1. Bodily parts like a hand, a foot, or an eye, as well as matter and form are supposed to be covered by *Cat.* 3 a 29-32 too; cf. Porph. *in Cat.* 94.22, 122.1-9 (bodily parts); 88.13-22 (matter and form).

[137] Cf. Plot. *Enn.* VI.3 [44] 15.12-15.

[138] Wurm *o.c.* 193-220.

A corollary of this system is that essential qualities can only be part of the immanent form, and hence part of substance, whereas all members of non-substance categories turn out to be *ipso facto* accidents.[139] Wurm stresses that the Neoplatonic commentators did not (in the commentaries we possess) investigate the relation between immanent form and accidents, besides regarding the accidents as supervening on *composite* substance, i.e. immanent form and matter together. Therefore, it is hardly surprising that they rank substantial qualities with substance, when confronted with a choice between substance (immanent form) or accident (one of the non-substance categories). Consequently, they all agree on this issue.

Thus we may conclude that Lucius' difficulty is first and foremost a problem that is related to the distinction between substance and accident, with a view to invalidating Aristotle's alleged definition of accident. Confronted with (proper) substantial qualities and quantities, all commentators mentioned so far solve the problem by accepting that substantial qualities are to be considered parts of substances and therefore substances. In this way the exhaustive division between substance and accident is maintained. Moreover, they confirm Aristotle's 'definition' of accident by understanding the clause 'not as a part' as if it is meant to exclude substantial qualities too, since they are parts of substances.

There is reason to believe that Iamblichus entertained a somewhat different view of the problem, which he bequeathed to Dexippus. Simplicius testifies that Iamblichus suggested supplementing the definition of accident as follows: 'in a subject, not as a part, and incapable of existing apart from that which it is in, *contributing nothing to the essence* (οὐσία) *of the subject*.'[140] The reason supplied is that both species and differentia contribute something to the essence, and are therefore to be excluded from the definition of accident. It is implied that for Iamblichus being a completer of a substance (essence) is *not* equivalent to being a part, and Dexippus follows his cue. This is not to say, of course, that they hold that the differentia is an accident: they merely use different arguments. Differentiae contribute to the essence of the things they characterize, and cannot be separated without the

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[139] This is of course markedly different from Aristotle's original objective, as interpreted above p. 188ff.

[140] Simpl. *in Cat.* 99.6-9; cf. Dex. *in Cat.* II.21 49.6-8 and Plot. VI.3 [44] 5.9-10.

destruction of their subject.[141] Simplicius, on the contrary, remarks that the addition may not be necessary. The same result can be obtained by the clause 'not as a part', for the differentia becomes a part just like the genus.[142] So in this respect he returns to the earlier view.[143]

Until now, the status of the differentia has merely been implied in the status of substantial qualities and quantities. Nevertheless, it seems that all commentators mentioned would have to say that all differentiae are substances, at least if they consider the substance–accident distinction to be equivalent to the Substance–non-Substance category distinction. However, only Ammonius and Philoponus opt for this view. Other commentators are deterred from squarely assigning differentiae to Substance by *Cat.* 3 a 21-22 and its sequel when discussing our third aporia. However, before we turn to this third aporia we must have a look at the second problem concerning the differentia in Aristotle's *Categories.*

3.2 Second aporia: differentia and genus (Cat. 1 b 16-24)

In *Cat.* 1 b 16-24 Aristotle gives two rules that concern the relation between differentiae and genera:

1. the differentiae of different genera[144] that are not subordinated one to the other differ in kind[145] themselves, as the example of animal versus knowledge shows: the differentiae of animal do not differentiate knowledge nor v.v.[146]
2. There is no reason why genera that are subordinated one to the other should not have the same differentiae, for the higher are said of the lower, so all differentiae of the predicate also hold of the subject (= *Cat.* 1 b 10-15).

Since this passage is the first in the *Categories* to mention genus, species, and differentia, the commentators briefly rehearse the meaning of

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[141] Simpl. *in Cat.* 98.10-12; cf. Dex. *in Cat.* II.20 48.7-11.

[142] Simpl. *in Cat.* 99.9-10.

[143] See p. 207-208, 221.

[144] Reading ἑτέρων γενῶν as in *Top.* 107 b 19, with Dex. *in Cat.* 29.29, Simpl. *in Cat.* 54.22, 57.21-22, and Ackrill (1963) 4 n. 1; *pace* Minio-Paluello (OCT) who reads ἑτερογενῶν, with Porph. *in Cat.* 81.25. However, the reading is irrelevant for the purpose of supporting the claim that differentiae belong to their proper genus only.

[145] I.e. εἴδει, often translated more specifically as 'in species'. It seems, however, that Aristotle is here using the term in a less technical sense.

[146] Cf. *Top.* 107 b 19-26 (with Alex. *in Top.* 453.21-23, 113.16-17) where the rule is applied in order to detect homonymity: if a term is a differentia in two different genera, it is homonymous.

these notions. They follow Porphyry's *Isagoge*, which the students are supposed to have studied before embarking on the *Categories*.[147] These rather general passages are interesting because some commentators who in their lemmas on 3 a 21-29 (section 3.3 below) turn out to support an intermediate position for the differentia, here only shed light on one side of the issue. For instance, Porphyry[148] states that 'whatever category contains the genus also contains the species of that genus and the proper differentiae of the genus and its species'. This seems to entail that e.g. differentiae of substances are substances, differentiae of qualities qualities etc. As we shall see, this agrees with Alexander's position. At the same time we should be aware that we only possess a report on Alexander's views concerning *Cat.* 1 b 16-24, although it seems implausible that he too qualified his opinions considerably when discussing *Cat.* 3 a 21-29. For as we shall see below, he alluded to the same discussion in his *Metaphysics* commentary, and reaches the same conclusion.

The first rule gave rise to the question what Aristotle meant by the notion of 'different genera'. Herminus and Alexander[149] not only took the phrase to refer to genera in different *categories* altogether (in agreement with Aristotle's example) but they also included genera which were ranked under one and the same genus on a higher level. This generated the problem raised by Alexander in his lost commentary on the *Categories*, that in some cases the same differentiae *do* occur in different genera not subordinated one under the other.[150] For

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[147] E.g. Porph. *in Cat.* 82.5-83.4; Dex. *in Cat.* I 31-32 28.28-29.29; Simpl. *in Cat.* 54.24-56.15. These introductions also contain discussions of simple problems such as the existence of species with only one member, and the proper sense of difference (i.e. essential difference) where the differentia is concerned.

[148] *In Cat.* 82.25-29; 83.7-8. Cf. Simpl. *in Cat.* 56.18-19.

[149] Herminus ap. Simpl. 57.21-58.14; Alex. *Quæstio de differentiis specificis* 169-170. For this work of Alexander's see Sharples (1987) 1188 under (6), 1193 (henceforth *De diff.*). This quæstio has survived in two Arabic versions, both of which were (fortunately) translated, the longer version into French by Badawi (1987^2), and a shorter version into German by Dietrich (1964), who adds the corresponding passages from Badawi's text, with corrections. Rather misleadingly, in presenting the Badawi-text Dietrich did not mark where he left passages out. Dietrich's survey of Alexander's works available in Arabic translation lists Badawi's earlier edition of the longer Arabic text (no. 10, p. 96), in *Aristu 'inda l-'Arab* (1947) 295-308. What seems to be a summary of this quæstio is found in Alex. *in Metaph.* 204.25-207.6, to be discussed below p. 242-246.

[150] Alex. *De diff.* 169. The text translated in Badawi (1987^2) is incoherent which suggests that the constitution of the Arabic leaves something to be desired; this is confirmed by new readings in other parts of the treatise by Dietrich (1964). There-

instance, the differentia two-footed is found in winged, footed, and swimming animal, all of which are genera not subordinated one under the other. Others, among whom we find Galen,[151] objected that differentiae must be further divided according to the prior difference, e.g. animal is divided into footed and footless, footed into two-footed and more-footed etc.[152] In his *Quæstio de differentiis specificis*[153] Alexander defends his point of view by pointing out that a differentia may exist in more than one genus and generate species in each of them.[154] According to him the limitation of a differentia to one genus entails the problem that we shall be unable to find differentiae for e.g. footed, for all possible differentiae will also occur in other genera. Again, if this is impossible, the first rule cannot be maintained, for it entails that differentiae occur in genera that differ in this way. If the critics concede that animal may be divided from different points of view, they must admit that differentiae from different divisions occur in each other's non-subordinate genera.

The entire issue is rendered harmless as soon as the phrase 'different genera' is taken to refer only to genera that belong to different categories altogether. Besides, if divisions of genera according to different points of view are accepted alongside each other and are duly kept apart, the problem does not arise either. These two arguments are found in later commentators, who are therefore no longer troubled by this problem.[155]

The second rule generated an issue of quantification. First Aristotle suggests that at least *some* differentiae of genera subordinated one under the other are shared by these genera; then he claims that *all* differentiae of the predicated genus are predicated of its subject. Dillon

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fore the following summary only tries to capture the general drift of the argument, and should be treated with due caution. My argument does not depend on this part of Alexander's treatise.

[151] According to Alex. *De diff.* 171. I have not been able to find any polemics against Alexander on this issue in Galen's work transmitted in Greek. Perhaps we should be cautious about allusions in Arabic texts to polemics between Alexander and Galen. However, Galen does lay great weight on proper division and knowledge of differentiae, see e.g. *Adv.Lyc.* XVIIIa 206-223, *Meth.Med.* I.3.8 (X.23-34 K.), and *Diff.puls.* VIII 629ff, where he lists three senses of 'differentia'. I am grateful to Manfred Horstmanshoff for these references.

[152] This reflects Arist. *Metaph.* VII.12.

[153] See note 149 above.

[154] *De diff.* p. 170-171 Badawi.

[155] Porph. *in Cat.* 83.4-84.9; Dex. *in Cat.* I.29, 28.12-15; Amm. *in Cat.* 31.14-30; Philop. *in Cat.* 41.4ff; Simpl. *in Cat.* 56.30-57.13.

plausibly suggests that Boethus may have been right in saying that all Aristotle meant is that *in those cases* where genera subordinated one under the other have the same differentiae *all* differentiae of the predicated genus are also predicated of its subject. This is a harmless statement.[156]

However, the commentators, at least from Porphyry onwards, solve this question by distinguishing between divisive and constitutive differentiae. All *constitutive* differentiae of the predicated genus are predicated of its subject, in accordance with the first rule. But only some *divisive* differentiae of the predicated genus are predicated of its subject, viz. only those which are constitutive of the subject species. Nevertheless, Ackrill is right in pointing out that Aristotle's text does not warrant such a distinction.[157]

However important the distinction between types of differentiae may be for discussions concerning the differentia, the problems regarding the first rule generated a discussion which bears on the categorial status of the differentia, though it has not been highlighted in modern literature on this issue. Alexander, as a sequel to his discussion of the problems regarding the first rule in his *Quæstio de differentiis specificis*, raised the question whether differentiae should be subsumed under the genus which is divided by them[158] or under another genus.[159] I assume the relation to the first half of the treatise might be that the question whether differentiae may *exist* in more than one genus as differentiae gave rise to the question in what genus they *belong*, if only in order to distinguish these two questions properly. Or perhaps we should split up the Badawi text into two different questions, since judging from Dietrich's edition the second half also circulated as a separate text. Whatever the case, Alexander devotes the second half of

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[156] Dillon (1990) 57 n. 93, referring to Boethus ap. Simpl. *in Cat.* 58.27ff.

[157] Ackrill *o.c.* 77. He also suggests to transpose κατηγορουμένου and ὑποκειμένου in order to make sense of the text. As Dillon (1990) 56 n. 91 notes, this suggestion had already been made by Boethus ap. Simpl. *in Cat.* 58.27-59.4 (cf. Porph. *in Cat.* 84.34ff), to be rejected by Porph. *in Cat.* 85, Dex. *in Cat.* 27.20ff, Simpl. *in Cat.* 59.4ff. (implicitly), by referring to the distinction between divisive and constitutive differentiae, which is discussed in the main text.

[158] Badawi reads 'under the genus *which contains the genus* which is divided by the differentia' while Dietrich corrects him and gives the reading I have adopted in the text. From the division (Diagram 2 below) it seems clear that Dietrich's reading is to be preferred.

[159] Cf. *De diff.* p. 174-179 Badawi. Dietrich's text only consists in this second part.

his treatise to a systematic discussion of this problem. It should be noted that the problem is not to what *category* the differentia belongs, but to what *genus*. However, not only does membership of a genus entail the category involved, but we shall see that from Alexander's point of view the answer to both questions can be the same.

The second part of Alexander's *De differentiis specificis* consists of a systematic division of all conceivable solutions to his question concerning the genus of the differentia.[160] The division is already started in the very question he sets out with: 'Should we subsume the differentia under the genus which it divides, or under another genus?' The division as a whole, as it can be reconstructed from Alexander's argument,[161] is best represented in a diagram (see next page).

Although the entire *Quæstio* deserves a full commentary,[162] I have to confine myself here to highlighting several aspects which relate Alexander's discussion to the problem of the categorial status of the differentia. First it is striking that though Alexander's question regards the *genus* of the differentia, his examples often refer to differentiae of the highest genera, i.e. *categories*. For instance, he compares the claim that e.g. all differentiae of Quantity belong to Quantity and all differ-

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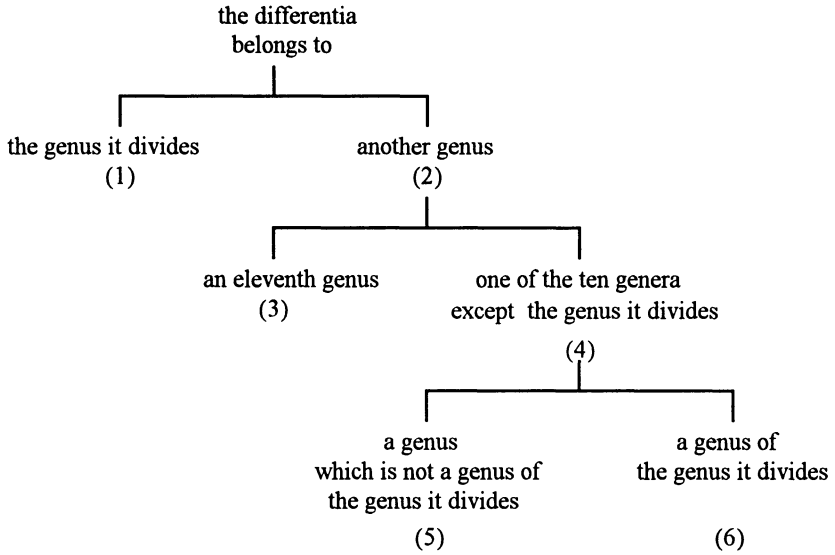
[160] Cf. Morrison (1993) 149 who provides a modern parallel to Alexander in distinguishing all possible solutions to the question to which category the differentia belongs, though apparently without knowing Alexander's *Quæstio*. He distinguishes the following solutions: a. *monocategorial* (all differentiae in one category, cf. 4); b. *bi-categorial* (each differentia is in two categories under different respects; this option includes a certain interpretation of the 'intermediate' position discussed below); c. *hetero-categorial* (each differentia is in another category than the one it divides, cf. 5); d. *homo-categorial* (each differentia is in the category it divides, which is a special case of 6 since the category is the highest genus of the genus a differentia divides); e. *zero-categorial* (in no category whatsoever, which includes the intermediate position defended by some commentators, as well as an eleventh category, cf. 3); f. *the pluralist interpretation*, which Morrison endorses (the differentia may belong to any category, regardless of the genus it divides). Of course our option 1. does not feature in Morrison's division because he concentrates on the *category* (the highest genus), not the *genus proximum*. For an assessment of Morrison's views, see above p. 184, 188-189, 193-194.

[161] E.g. (1) and (4) are first treated together by Alexander (p. 175 Badawi, §3 Dietrich) but then he argues that we have no clue which category we would have to choose; besides, it is ridiculous to put only the differentiae of that category into another one, if 'in another one' is supposed to be the rule.

[162] However, first a new reliable Arabic text should be provided, with a translation for those ignorant of Arabic, like myself.

Diagram 2 The division in Alexander's *Quæstio de differentiis specificis*



entiae of Relation to Relation[163] (= 1), with the claim that all differentiae are in Quality, except those of Quality (= 4). Since there is no particular reason to rank the latter under any genus apart from Quality, nor indeed to rank all differentiae under Quality, option (4) is rejected.[164]

Option (1) entails the unacceptable consequence that differentiae become akin (more literally: 'homo-geneous', ὁμογενής) to species in all other genera, though these only exist 'after' they have been distinguished by the very same differentiae. Moreover, assigning differentiae to the same genus as the species they constitute, turns them into species as well.[165] But now Alexander is confronted with Aristotle's argument against predicating the genus of its differentia. In *Top.* VI.6 144 a 33-b 1 Aristotle objected that differentiae of animal cannot be species of animal. In that case a number of 'animals' (the differentiae)

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[163] Note that this is the only case which is explicitly confirmed by Aristotle, *Top.* VI.6 145 a 13-18, 146 a 36-b 12, 147 a 23-28, 149 b 4-23. The example of Relation is only mentioned in the longer Arabic version, *De diff.* p. 175 Badawi = §3-4 in Dietrich's translation.

[164] Cf. *De diff.* p. 175 Badawi, §3-4 Dietrich.

[165] Alexander argues: the genus is said of universals when it is said of species; the genus is said of the differentia which is universal, not particular; hence, the differentia must be a species; cf. *De diff.* p. 175-176 Badawi, §5-6 Dietrich.

will be predicated of the species, and since each animal is either a species or an individual all differentiae will be either species or individuals, which is absurd.[166]

Alexander uses the same example of the genus animal, but he has a slightly different angle: to him the difficulty lies in the differentia becoming a *composite* substance, whereas it is simple in itself, a form,[167] and the true differentiating factor in composites. The commentator notes that such composites only occur in the category of Substance, and for those cases he provides an ingenious solution.[168] When taken in itself the differentia is not in matter, so it is not a composite. Hence it does not belong to the genus it divides when that genus ranges over composites.[169] Thus Aristotle's statement in the *Topics* (if it is confined

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[166] Alexander mentions a further objection: since species consist of genus and differentiae, there will be differentiae of differentiae *ad infinitum*, cf. p. 176 Badawi, §6 Dietrich (cf. Plot. *Enn.* VI.3 [44] 18.1-6, Simpl. *in Cat.* 99.29-100.3). He replies that the same holds with genera, which have genera, but only up to the highest genus, cf. p. 178-179 Badawi (not in Dietrich). The series of differentiae ends in the same way, at their highest genus. But more important is that the differentia as such has no proper definition, unless one would accept something like 'that which is said of many that are qualified in a certain way'; but this is not a proper definition consisting of a genus and a differentia. Again, 'differentia' is a common name, like 'genus'. In both cases certain natures exist, and it only befalls them accidentally that they are differentia or genus. The description applies to different kinds of entity in all categories inasmuch as they happen to be differentiae. This latter argument agrees with my interpretation of Aristotle, above p. 188ff.—For Alexander's use of quality-terms in this regard, see Alex. *in Top.* 314.14-27; *in Metaph.* 399.1-19.

[167] Note in advance that this passage confirms my suggestion of regarding the differentia as a 'substance inferior to the composite' in Diagram 3 below.—The identification of the differentia with form may find support in Arist. *Metaph.* VII.12 1038 a 9-30, where the rule is laid down that the last differentia not only entails the *infima species* it constitutes, including its genus, but all higher genera as well. Hence, the last differentia 'will be the essence (οὐσία), definition, and form (εἶδος) of the thing (πρᾶγμα)'.

[168] *De diff.* p. 177 Badawi; §7-8 Dietrich. See also Alex. *in Metaph.* 206.12-207.6, translated below T44, p. 242.

[169] Alexander *De diff.* p. 176-177 Badawi (not in Dietrich) argues that even when the differentia is taken along with matter, it need not belong to a genus; e.g. 'footed' may occur in many different genera, and we only know which one when it is united with a particular genus to make up a species. Only then is it possible to say that the differentia is e.g. a substance, and indeed a species of substance of which the genus is predicated. In other words, enmattered existence prohibits synonymous predication of the genus; matterless forms can be differentiae and species at the same time. Cf. Alex. *in Top.* 319.17-20 where the relation between the generation of the form and its definition is made particularly clear.—To my mind, the argument sounds too Neoplatonic to be truly Alexander, and perhaps we should here pay heed to Diet-

to the range of its example, animal) remains unaffected. However, the highest genus in question, Substance, ranges over both simple and composite substances, so all that needs pointing out is that when dealing with composite substances the differentiae do not belong to the proximate genus but they belong to the highest genus of the genus they divide, i.e. to the *category* of Substance.[170] Or, in terms of our diagram: we are dealing with a special case of (6). Here the questions to which genus and to which category the differentia belongs have the same answer. Differentiae of simple substances as well as differentiae in all other categories should simply be regarded as belonging to the genus they divide, as its species: so in most cases option (1) suffices. For instance, 'the continuous' is both a differentia of Quantity, and a quantity itself.[171]

A general rule, which would have to take the special case of composite substances into account, would be that the differentia at least belongs to the highest genus (= category) to which the genus it divides belongs; at least the differentiae of the highest genera (= categories) are at the same time their species. So for the sake of composite substances the rule about the genus of the differentia turns out to be a rule about the category of the differentia. This may also explain why Alex-

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rich's warning that Arabic translators were apt to insert their own comments in the translation. The argument as given in the main text, however, is supported by Alex. *in Metaph.* 206.12-207.6, discussed below p. 242ff. The statement that the *genus* enables the existence of the differentia (p. 177 Badawi), which runs parallel to the distinction of taking the differentia with or without *matter*, may go back to the famous Aristotelian dictum that 'genus is like matter', cf. Rorty (1973), Happ (1971) 636-647; see Chapter 1 p. 27 n. 90.

[170] As Alexander puts it (*De diff.* p. 178 Badawi, §11 Dietrich): 'In this way the differentiae of animals turn out to be substances, without being animals'.—An objection to the effect that substances are able to receive contraries, whereas differentiae are not, Alexander puts down to sheer lack of understanding: that proprium of substance only applies to *individual* substances (*De diff.* p. 178 Badawi, §12 Dietrich). Indeed, *Cat.* 4 a 10-b 19 emphasizes that receiving contraries is characteristic of substances *one in number*.—Badawi's text contains the tantalizing sentence: 'Indeed, the differentia that belongs to Substance signifies a *substantial quality*' (p. 177 Badawi). Again, this passage is lacking in Dietrich's text, which may point to a later insertion; if not, we have yet another occurrence of 'substantial qualities' in the commentators.

[171] *De diff.* p. 178 Badawi, §8 Dietrich. Contrast Arist. *Top.* 122 b 18-24 (one should not put the differentia in the genus), 144 a 32-b 3 (the genus is not predicated of the differentia). Cf. Alex. *in Top.* 451.25-452.11 (*ad* 144 a 31) where the commentator argues more in line with Aristotle.

ander at some stage notes that the differentiae of the highest genera behave differently from differentiae of other genera.[172]

In this connection the Arabic text edited by Dietrich contains an obscure reference to Aristotle: 'The Philosopher has defined the differentiae as follows: "They cannot be conceived as a different species"' (§10). Deichgräber[173] suggests a reference to the two rules above;[174] it seems that the first rule is most apt: 'The differentiae of different genera which are not subordinated one to the other are themselves different in kind (εἴδει)' (*Cat.* 1 b 16-17). Apparently Alexander (if not the Arabic translator) used the converse of this rule to obtain a statement about differentiae in subordinated genera: 'the differentiae of different genera which *are* subordinated one to the other, *are not* different in kind'. If this claim is to be applicable here, we could supply the suggestion that if differentiae of such genera belong to the same species, they also belong to the same highest genus or category. But it is not easy to see how Alexander would defend the idea that all differentiae of subordinate genera belong to the same *species*.[175] Alternatively, we could understand the new rule as saying that the differentiae are not different in kind *from the genera they divide*, i.e. they belong to the same category. It seems best, however, to leave speculation aside; all we can do is suggest that Alexander may have linked his solution to the initial occasion for his treatise, *Cat.* 1 b 16-24.

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[172] *De diff.* p. 175 Badawi, §4 Dietrich. For the summary conclusion, see p. 178 Badawi, §10-11 Dietrich.

[173] Ap. Dietrich pp. 134-135, note to line 71. Deichgräber's reconstruction of the Greek is on the whole unconvincing, and his parallels are often misleading because they are first and foremost verbal, not doctrinal, parallels. Unfortunately, he did not see the importance of Alex. *in Metaph.* 206.12-207.6 for his reconstruction; see further p. 242ff.

[174] See p. 210.

[175] Later commentators usually interpret 'different in kind (εἴδει)' as an indication that *constitutive* differentiae are the issue here, not divisive ones. Apparently they take the phrase to mean 'different with regard to the species they constitute'. Cf. Dex. *in Cat.* I.33 29.28-30.8: εἴδει means τῷ λόγῳ (cf. Arist. *Phys.* I.6 190 a 16-17) to avoid homonymity as in 'feet' of animals and furniture, and signifies specific (εἰδοποιοί) differentiae, not accidental ones. Dexippus' reference to the *Topics* here probably concerns *Top.* 106 a 9ff, a 24ff, passages which may also be brought to bear on *Cat.* 1 b 16 and *Top.* 107 b 19ff. See further Amm. *in Cat.* 31.25-30, Philop. *in Cat.* 41.22-42.10, Simpl. *in Cat.* 55.3-16, Olymp. *in Cat.* 51.25-36 (εἰδοποιοί), David (Elias) *in Cat.* 156.16-33 (ἕτερα εἴδη ποιοῦσαι). Simplicius glosses ὅσα τῷ λόγῳ τῆς οὐσίας διαφέρει, and points out that the differentia is predicated ἐν τῷ ποιόν τι because it designates τὸ οὐσιῶδες μετὰ τῆς ποιότητος, thus trying to explain (not very convincingly) ποιόν in the earlier phrase.

Option (3), a special, eleventh, genus for the differentia over and above the ten genera which are the categories, is interesting in view of Ammonius' criticism of the introduction of an eleventh category.[176] Alexander, too, rejects it, both because it would exceed the number of ten categories authorized by Aristotle, and because of the infinite regress arising from the fact that the differentiae of the eleventh category would require the introduction of a twelfth category, etc.

It is also noteworthy that Alexander operates with a main division of the category of substance into simple and composite substances, i.e. substances composed of form and matter.[177] Since he regards the differentia as an anhomoiomerous part of the species' definition[178] Alexander believes that the differentia is simple, which can be used to show that the differentia in the category of substance is a simple substance. We shall see that this division also plays a major role in Ammonius' solution of the problem of the categorial status of the differentia.[179] The division may be used to demonstrate how the substances treated in the *Categories* (composite substances) and the *Metaphysics* (forms) all belong to one, coherent system.[180] And this was a concern of both Alexander and Ammonius.

To conclude, for Alexander the differentiae of substances are substances.[181] Further research on Alexander may yield clear indications that he employed this result to answer Lucius' problem of substantial qualities, or to interpret *Cat.* 3 a 21-29.[182]

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[176] Alex. *De diff.* p., 174 Badawi, §2 Dietrich. Compare Amm. *in Cat.* 46.18ff; Philop. *in Cat.* 66.8ff; cf. Deichgräber ap. Dietrich p. 132 *ad* line 7, who also lists Boethus ap. Simpl. *in Cat.* 78.17, though this passage need not suggest an eleventh genus. For the Arabic tradition of the issue see Dietrich 123 n. 2. See further below, p. 229.

[177] *De diff.* p. 177 Badawi, §7 Dietrich.

[178] Cf. Alex. *in Metaph.* 205.24. The other part is of course the genus, hence they are both anhomoiomerous.

[179] The entire division is given in Diagram 3 below p. 236.

[180] Cf. P. Hadot (1972).

[181] Cf. also Ps-Alex. *in Metaph.* 743.17-18, 749.19-20 etc. Tarán (1987) suggests this part of the commentary dates from an author contemporary with or shortly prior to Syrianus, which would testify to a certain tradition of this interpretation before Ammonius. It is certain that Alexander's commentaries continued to be in use in Neoplatonic schools up to the sixth century AD, cf. I. Hadot (1987b) 235-236 n. 33.

[182] Cf. Alex. ap. Simpl. *In Cat.* 99.19-20. One indication may be found in Alexander's commentary on the chapter on quality in *Metaph.* V.14. The commentator contrasts the differentia of substance which is predicated in $quality_p$ to mere quality, and explains that 'the differentia of substance is a quality *in ousia*' (*in Metaph.* 399.6). Dooley (1993) 157 n. 315 takes the italicized expression to mean 'in the

3.3 Third aporia: the status of the differentia (Cat. 3 a 21-32)

With the third aporia we arrive at the context which has direct bearing on the interpretation of *Contra Proclum* XI.5. In *Cat.* 3 a 21-32 Aristotle seems to contradistinguish the differentiae of substances from the primary and secondary substances under discussion. 'Not being in a subject' is not a proprium of substances, Aristotle claims, for the characteristic applies to differentiae too. We can now understand why the commentators experienced a contradiction in Aristotle's text. In the response to the first aporia they associated the differentiae with substances; now *Cat.* 3 a 21-32 implicitly denies this association. At this point in their commentaries, then, they are faced with the problem which category the differentia belongs to. The answers given by the commentators vary widely but we shall see that Philoponus follows Ammonius in assigning differentiae to the category of Substance. It is this solution that Philoponus refers to in *Contra Proclum* XI.5, where he applies it to essential quantities.

Again, we start our discussion with the text of Aristotle which gave rise to the problem. After pointing out that both primary and secondary substances share the characteristic of 'not being in a subject' (*Cat.* 3 a 6-21) Aristotle denies that this characteristic is a proprium of the category of Substance:

T39 This is not, however, peculiar to substance but the differentia also is not in a subject. For footed and two-footed are said of man as subject but are not in a subject; neither two-footed nor footed is 'in' man. (Arist. *Cat.* 3 a 21-25, transl. Ackrill)

It seems clear enough that the differentia is here *distinguished* from Substance, even though they share the characteristic of 'not being in a subject'. Moreover, secondary substances and differentiae also share the feature of being synonymously predicated of species and individuals, as Aristotle goes on to show (*Cat.* 3 a 33-b 9). Following the line of interpretation we set out above, we may note that Aristotle does not explicitly classify the differentia *as such* in any category. He merely states that a characteristic of the category of Substance is shared by

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category of Substance' but since Alexander wavers between substance and essence as the meaning of οὐσία throughout the lemma, and since quality in οὐσία is contrasted with predication in quality$_p$, it seems equally possible to translate 'the differentia of substance is a quality in essence$_p$'.—Note by the way that Alexander properly distinguishes predication in quality$_p$ from being a quality; also in his commentary on *Top.* I.9 (*in Top.* 65.6ff) he shows that he did not suffer from some of the confusions of later commentators, see p. 181ff.

the differentia of a substance. On the other hand, he does not state the reason why the differentia is 'not in a subject' either. We saw that the commentators obtained the supporting argument by applying the clause 'not as a part' to differentiae, but it seems that Aristotle does not do so. All that can be gathered from the *Categories* is that for Aristotle 'parts' of primary substances are e.g. a particular hand or head (*Cat.* 8 a 15-21, b 15-19). After the statement that 'not in a subject' also belongs to differentiae (T39), and the statement that the definition of the differentia is said of whatever the differentia is said of (*Cat.* 3 a 25-28), Aristotle reminds us:

T40 We need not be disturbed by any fear that we may be forced to say that the parts of a substance, being in a subject (the whole substance), are not substances. For when we spoke of things 'in a subject' we did not mean things belonging in something as parts.[183] (Arist. *Cat.* 3 a 29-32, transl. Ackrill)

Aristotle goes on to argue that synonymous predication is another feature belonging to (secondary) substances and differentiae alike. Hence T40 is surrounded by paragraphs discussing the differentia.[184] According to the commentators this warrants their application of the clause 'not as a part' to the differentia, and they may be right. But again, Aristotle does not explicitly make the connection. No doubt his silence provoked the commentators' solutions, which in this case support an explicit statement by Aristotle.

However, by ruling out that the differentia is 'in a subject', Aristotle also rules out that it belongs to one of the non-substance categories. For we took the pair 'in a subject'–'not in a subject' as distinguishing the category of substance from the nine non-substance categories. It seems, then, that Aristotle leaves no room to classify the differentia of a substance in any category whatsoever.

We have already seen what Alexander's solution would have been: most differentiae belong to the genus they divide as its species, and all differentiae belong to the category to which that genus belongs, also in the case of differentiae of composite substances.

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[183] A clear reference to *Cat.* 1 a 24-25.

[184] The commentaries discuss the question whether *Cat.* 3 a 29-32 should be placed before 3 a 21-28, which would tighten the connection between differentiae and parts of substances; see e.g. Amm. *in Cat.* 47.5-13, Philop. *in Cat.* 68.23-69.11, Simpl. *in Cat.* 96.31-97.23. All, however, retain the text as printed in OCT because the connection is supposed to be clear anyhow. Ammonius and Philoponus use their interpretation of the status of the differentia to solve the textual problem.

The Neoplatonic commentators experience great difficulty over this passage. For in their interpretation of *Cat.* 1 a 24-25 they had ranked substantial qualities, including differentiae, under Substance. Now they are confronted with a clear statement that the differentia does not belong to Substance—otherwise 'not being in a subject' would have been acceptable as a proprium of Substance. What is more, at the same time they find confirmation of their earlier conclusion that the differentia is 'not in a subject', i.e. (to them) not an accident. So the differentia is neither a substance nor an accident. However, since 'in a subject'–'not in a subject' is an exhaustive division, the commentators are confronted with a difficult choice: either simply to admit that Aristotle's division is wrong, or to try and find a classification of the differentia which leaves the division in place. It is from here that the discussion concerning the categorial status of the differentia starts.

From Porphyry onwards we can clearly distinguish two different solutions. The first leads from Porphyry through Iamblichus and Dexippus to Simplicius and regards the differentia as an οὐσιῶδες ποιόν which is in some sense intermediate between Substance and Quality. The second starts with Ammonius and is found in Philoponus and David (Elias); this line of interpretation regards the differentia as a Substance. It is noteworthy that none of these commentators shows familiarity with Alexander's *Quæstio de differentiis specificis*. They do not refer to it nor do they use its arguments, not even Ammonius and his school, although they will be seen to converge with Alexander in the case of the differentiae of substances. Perhaps Alexander did not discuss the issue at length in his *Categories* commentary, or the Neoplatonists simply chose not to follow him on this occasion. If the *Quæstio* was not in regular use, they could also have found Alexander's view in his *Metaphysics* commentary, as we shall see below. But again didactic reasons may have prohibited such cross-fertilization between commentaries.

Before embarking on a survey of the solutions of the ancient commentators, it may be useful to distinguish five different interpretations of the phrase οὐσιῶδες ποιόν. These five interpretations do not correspond to the five different senses of quality-terms distinguished above (Q1-5),[185] although some of the quality-terms are relevant here inasmuch as they serve as arguments for the essential/substantial or quali-

[185] See p. 181ff.

tative aspect of the οὐσιῶδες ποιόν. The interpretations of οὐσιῶδες ποιόν (OP) to be distinguished are:

OP1 'essential quality', i.e. the primary sense of 'quality' as indicated by Aristotle (*Metaph.* V.14, T32). It is regarded as a subdivision of the category of Quality, e.g. because it is predicated in $quality_p$.

OP2 'essential quality', i.e. the primary sense of 'quality' as indicated by Aristotle, but ranked under the category of Substance, e.g. because as a part of something's essence it is not an accident and it is predicated in the $essence_p$.

OP3 'substantial quality', i.e. an item in the category of Quality which is the differentia of an item in the category of Substance;

OP4 'substantial quality', i.e. a quality which is ranked under the category of Substance because it is the differentia of an item in the category of Substance;

OP5 'substantial quality', i.e. a hybrid entity, which in a way manages to belong to the categories of both Substance and Quality at the same time, or at least combines features of both.

Of course this articulation of οὐσιῶδες ποιόν may also be applied *mutatis mutandis* to οὐσιῶδες ποσόν etc.

3.4 Porphyry, Iamblichus, Dexippus, and Simplicius

We have already seen that Porphyry supported the rule that parts of substances are substances and applied it to differentiae. In the context of *Cat.* 3 a 7ff. this rule explains why 'not being in a subject' is called a property of substances, whereas parts of substances are substances and yet 'in' a subject in a sense (*in Cat.* 94.17-28). Even though a differentia is predicated of a subject, it is not in a subject, because synonymous predication is irreconcilable with being an accident. Since differentiae are predicated synonymously, they cannot be accidents; hence they are not 'in a subject'. Porphyry repeats the definition of the differentia as that which is predicated in $quality_p$ of things differing in species (94.29-95.9). Then the crucial question is reached: if the differentia is not a substance (as *Cat.* 3 a 21-22 implies) nor an accident (for it is not in a subject);[186] and if there is nothing intermediate between substance and accident; what could the differentia be (95.10-16)? Porphyry's answer is worth quoting:

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[186] Porph. *in Cat.* 82.25-29 states that 'whatever category contains the genus also contains the species of that genus and the proper differentiae of the genus and its species'. This also implies that differentiae of substances cannot be qualities and will therefore belong to Substance. Cf. *ibid.* 83.7-8. This statement may reflect Alexander's discussions on the issue, see above p. 214ff.

T41 Aristotle says that it is not merely a quality (οὔτε ποιότης μόνον)—for then it would be an accident—nor merely a substance (οὔτε οὐσία μόνον)—for then it would be numbered among the secondary substances—but that it is this whole: a substantial quality (ποιότης οὐσιώδης). Therefore it is not predicated in the essence$_p$ of what it is predicated of, but in quality$_p$.[187] (Porph. *in Cat.* 95.17-20)

In my opinion, the twofold 'not merely' indicates that Porphyry wants the differentia to be a quality *as well as* a substance, which is brought out by the hybrid designation 'substantial quality', which seems designed to capture something (if not all) of both categories (OP5).[188] The final sentence of T41 seems intended to support the qualitative aspect of a substantial quality: it is predicated in quality$_p$. Here we encounter the confusion between kinds of predication and categories explained above: quality is taken in sense Q2.

This interpretation is corroborated by the sequel which shows the same intention of defending both the substantial and qualitative aspects of the substantial quality. First, differentiae like 'hot' in fire and 'rational' and 'two-footed' in man are identified as substantial qualities.[189] These features are all qualities, but since their loss destroys fire and man respectively, they are completers of substance. As such they are not only included in the definition of substance, but also themselves substances (*in Cat.* 95.21-33). Another indication for the substantial aspect of the substantial quality is that it reveals the nature of substance, e.g. *what kind of* animal man is, something that accidents do not do (*in Cat.* 95.33-35). This time quality in sense Q1 is apparently used as an argument in favour of a classification in the category of Substance. Therefore I conclude that Porphyry's notion of substantial quality is OP5: a hybrid entity combining features of both categories.[190] It remains as yet unspecified whether this 'substantial quality'

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[187] The translation by Strange (1987) 87 slightly obscures the argument by immediately translating ἐν τῷ ὁποῖόν τι ἐστιν with 'an essential qualification' (cf. 86). Though this captures the right meaning in this context, it does not bring out that it is the expression familiar from *Top.* I.9 that is used here, nor that it is meant to corroborate the qualitative aspect of the substantial quality.

[188] Therefore I choose 'substantial quality' rather than 'essential quality' which seems less apt since it clashes with the following sentence where it is said that the differentia is *not* predicated in essence. Strange *o.c.* 87 n. 198 inverts the emphasis.

[189] Cf. Porph. *in Cat.* 99.4-16. Note that Plotinus already used the term οὐσιώδης ποιότης for essential qualities, *Enn.* VI.3 [44] 14.30-32.

[190] So Morrison 154. Dillon (1990) 89 n. 50 ascribes to Porphyry the view (= OP1) that the differentia is a quality, though an essential one which is constitutive of substance, but *without* being intermediate and *without* implying that it is a part of

is to be regarded as an eleventh category. Perhaps Porphyry had more to say on the issue in his large commentary *Ad Gedalium*, now lost.

If the reports we have are trustworthy, Iamblichus addressed this lack of clarity by elaborating on the question *how* exactly the substantial quality is able to combine features of both Substance and Quality. His view of the differentia is preserved for us in the commentaries of Dexippus and Simplicius, both of whom on the whole agree with Iamblichus.[191] I follow Dillon in assuming that the entire drift of the argument in both Dexippus and Simplicius is likely to derive from Iamblichus, especially because Simplicius attributes important parts of the argument to Iamblichus by name.[192] The views of these philosophers are therefore best discussed together.

Their account shows two distinctive features: a general consideration about intermediates, and a systematic listing of possible solutions to the problem. As to intermediates,[193] we read in Dexippus that inter-

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substance and therefore substance, which are the other possibilities listed by Dexippus *in Cat.* 49.11-23. However, since Porphyry's text implies that he believes his substantial quality to be intermediate and since he explicitly claims that it is a completer of substance and therefore a substance, Porphyry's position does not seem to be contained in Dexippus' list. Ellis (1994) n. 5 attributes to Porphyry the doctrine that substantial quality is *neither* substance *nor* quality. He draws on 'Elias' (= David), *in Cat.* 173.13-14 in support, but though that commentator says that 'Porphyry dared to say that there is a nature intermediate between substance and accident and to assign the differentia to that nature', he goes on to illustrate this by referring to people who decide the issue whether light is something corporeal or incorporeal by claiming that it is 'incorporeal *and* corporeal' (173.14-17, my emphasis). Apparently, according to David (Elias) too, Porphyry's substantial quality is a hybrid (Ellis's no. 3) rather than a separate kind. The difference is important, for Ellis's interpretation makes Porphyry introduce an eleventh category right away, which seems unlikely because of Porphyry's terminology, and also because he tries to interpret Aristotle favourably. On my view, the hybrid may be conceived as somehow depending on both categories without constituting an eleventh category; this would also leave the exhaustive division in place. I assume this is what Porphyry intended; and the tradition developed his views in that direction, as we shall see. If I am right, no commentator believed that a substantial quality was *neither* substance *nor* quality; therefore I did not list this option under the different senses of οὐσιῶδες ποιόν.

[191] Dex. *in Cat.* II.21 48.20-49.25; Simpl. *in Cat.* 98.19-99.12. Simpl. *in Cat.* 2.30-3.17 tells us his commentary is to be regarded as an abridged and clarified version of Iamblichus' commentary on the *Categories* (now lost). His elaborate essay on the differentia (*in Cat.* 96.31-102.10) contains much of value, which I hope to discuss elsewhere. Here I confine myself to the argument on the categorial status of the differentia.

[192] See Simpl. *in Cat.* 99.7-9, 101.12, 22.

[193] Dex. *in Cat.* II.21 48.25-49.6, 49.11-20; Simpl. *in Cat.* 98.23-30.

mediate stages are inexpressible (ἄρρητος).[194] Between a potential man, not yet a substance and incomplete, and an actual man, a complete substance, there is an intermediate stage inaccessible to us.[195] In the same way, the differentia mediates between substance and quality or between substance and accident. It leans towards substance in that it contributes to something's being (εἶναι), and in that it is a completer of essence (οὐσία), and therefore not in a subject. On the other hand it leans towards quality in that it contributes to something's being of a certain sort (ποιὸν εἶναι).

It seems likely that Iamblichus supported this intermediate position: Dexippus implies as much in his elaborate preliminary account of intermediates which he introduces as 'an axiom, as it were, on the basis of which we will be able to judge the problems and the solutions' (*in Cat.* 48.25-27) before applying it to the problem of the differentia (49.4-6). Simplicius explicitly chooses this option after listing the possible solutions (*in Cat.* 99.3-7). Both add as the consequence of this argument that the definition of accident be amended, a suggestion which is explicitly attributed to Iamblichus by Simplicius (*in Cat.* 99.8-9).[196] This inference seems to confirm that the preceding account of intermediates indeed derives from Iamblichus.

The other dominant feature of the Iamblichean account seems to have been a systematic survey of the solutions. Simplicius presents them as a necessary division of all possible solutions, without the claim that each of them was ever defended.[197] Dexippus broadly ascribes them to 'the philosophers of old' without being more specific.[198] I quote Simplicius' listing because it is the most elaborate:

T42 It is necessary, then, that the differentia is
1. a substantial quality (ποιότης οὐσιώδης) completing substance, or
2. intermediate between quality and substance, providing substances with a connection with accidents, and accidents with a connection with substances. For nature does not like to proceed from one opposite to another immediately (ἀμέσως), as it did not proceed from animals to plants either, but established an intermediate nature, the zoophytes, which brings both extremes together and is mutually completive or

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[194] Dillon's translation (1990, p. 89) 'imperceptible' seems less fortunate.

[195] Iamblichus is particularly fond of the term ἄρρητος, e.g. in connection with the bond that unites the natural realm with the divine through theurgy, *Myst.* V.10, 210.15-211.18 Des Places.

[196] See above p. 209.

[197] Simpl. *in Cat.* 98.23-35.

[198] Dex. *in Cat.* 49.9-10.

connective (συμπληρωτικὴν ἢ συνδετικὴν πρὸς ἄλληλα). In this case, then, [nature] established the differentia as an intermediate,
   a. separately from either one (according to some), or
   b. as participating in both (according to others).
3. There may be another opinion of people saying that the differentia is not only constitutive of substance but also part of it,
   a. either, that is, when considered inasmuch as it encompasses the subject,
   b. or being a part of the substance in the sense of substantial form (ἡ κατὰ τὸ εἶδος οὐσία),
   c. or as changing along with the relations pertaining to the subject, so as to be in a way differently disposed about it as well.
(Simpl. *in Cat.* 98.22-35, my numbering)

The threefold division corresponds to assigning the differentia to the category of Quality (1), the category of Substance (3), or to an intermediate kind (2). Simplicius is able to call this a necessary, i.e. exhaustive, division, only because he reduces the entire issue to a choice between Substance and Quality. Dexippus and Simplicius draw on descriptions of the differentia as 'contributing to something's being of a certain quality' (= Q1), 'being predicated in quality$_p$' (= Q2), and 'determining the quality concerning substance' (= Q5). Since all of these senses are taken as indications of the category of Quality we can only conclude that they were confused by these quality-terms.

The first aporia about the validity of Aristotle's distinction between substance and accident now re-emerges as the question of the validity of Aristotle's distinction between substance and quality. So if these commentators accept a *tertium quid* between substance and quality, they also accept a *tertium quid* between substance and accident. Simplicius explicitly links the two issues under option 2.

Moreover, Simplicius makes clear that his discussion pertains to differentiae *in general*, i.e. including differentiae in other categories than Substance.[199] Indeed, his arguments pick out characteristics of the differentia *as such* (i.e. as a predicate). Accordingly, the fact that he is dealing with a lemma from the chapter on Substance, and that all differentiae of substances mentioned as examples happen to be qualities,[200] does not seem to be particularly relevant.

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[199] Simpl. *in Cat.* 99.1-3.

[200] This feature of the division of natural substances was explicitly noted by Plot. *Enn.* VI.3 [44] 17.8-12 who also notes that quantity is rarely used in this connection. This simple fact also explains some of Philoponus' emphasis in presenting three-dimensionality as an essential *quantity* in *Contra Proclum* XI.5.

Let us take a closer look at each option. In the context of the first option the term substantial quality can only be used in sense OP1: a quality, which is a completer of substance. The distinction between being completive and being a part, which already emerged from Iamblichus' supplement to the definition of accident, is found again in this division where it serves to distinguish the first possibility from the third. This is a further indication that the entire division derives from Iamblichus.

The second possibility again elaborates on the intermediate status of the differentia, which is not designated as 'substantial quality' any more in Porphyry's way. Here we encounter an early example of the concept of mediation, which is so characteristic of Neoplatonism. The example of the zoophytes is of course more convincing than the inexpressible intermediates of Dexippus: they are real-life creatures that belong to the sensible world. Yet, it is precisely this feature which aggravates the disruption of the originally exhaustive division between substance and accident and turns them into a true *tertium quid*. Perhaps this may have prompted some to emphasize the fact that the intermediate nature *participates* in both extremes (2b) which may be intended to express a *dependence* on the extremes rather than the existence of an equivalent third kind. With option (2a), however, there is no doubt that a new kind of entity is introduced between the extremes.

Dexippus and Simplicius defend their choice of this option (2) by pointing to correspondences between differentiae and substances, as well as between differentiae and qualities. Therefore it seems likely that they would prefer an interpretation in terms of participation (2b). A disruption of the categories by introducing an eleventh category may have been avoided in this way, although participation and independence may also be considered two sides of the same coin.

We may conclude that Porphyry's tentative solution is turned into a full-fledged Neoplatonic intermediate. Perhaps Dexippus still felt the need to counter the apparent impossibility of a *tertium quid* between two extremes of an exhaustive division by explaining it as the sign of a truly inexpressible mediation. Simplicius is less mystifying, and leaves out this 'axiom'. Yet he preserves the more positive counterpart of the argument without clearly deciding for either option (2a) or (2b).

The third possibility elaborates another feature of Porphyry's account: the differentia as a part of substance. I must admit that its sub-

division is quite puzzling, and Dexippus' account is not very helpful.[201] Option (3a) seems to turn on the idea that the differentia is part of the subject in the sense of its limit or determination. Option (3c) dwells on the notion of a part as something that shares the vicissitudes of that which it is a part of. At least option (3b) is clear: the differentia is part of the form, and therefore part of the substance. This is closest to Porphyry's application of the rule 'parts of substances are substances' to differentiae. As has been noted above[202] Simplicius accepted this application, contrary to Iamblichus. Nevertheless Simplicius rejects the third option, and follows Iamblichus and Dexippus in choosing the second, because the differentia also contributes to something's being of a certain sort (= Q1), and determines the quality concerning substance (= Q5). These arguments, together with the fact that Aristotle opposes differentiae to substances in the lemma under discussion (*Cat.* 3 a 21-22), still suffice to deter Simplicius from assigning the differentia to the category of Substance.

3.5 Ammonius, Philoponus, Olympiodorus, and David (Elias)

Now that we have seen not only how the problem of the differentia arose but also what solutions were handed down to Ammonius and Philoponus, we can properly assess the significance of the solution these commentators chose to defend.

As is well-known, the two commentaries edited under the name of Ammonius and Philoponus respectively are in fact two different reports of Ammonius' lectures on the *Categories;* hence they should be treated together. The interpretation of Ammonius determined the course of the Alexandrian commentary tradition, since it was followed by Philoponus (in *Contra Proclum* XI.5), Olympiodorus and David (Elias).[203] Because the different versions are essentially the same and mutually clarify each other, they will be discussed together.

Ammonius[204] squarely opposed the Athenian tradition by assuming that it is impossible that the differentia is *not* a substance. Any kind of intermediate would entail an eleventh category. If there are only ten categories, and if there is nothing between substance and accident, an intermediate is excluded. In so many words Ammonius and his follow-

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[201] Cf. Dillon 90 n. 53.

[202] See p. 210.

[203] For the attribution of this commentary, see above p. 206 n. 131.

[204] Amm. *in Cat.* 45.9-17; Philop. *in Cat.* 66.6-25; Olymp. *in Cat.* 67.18-35; David (Elias) *in Cat.* 173.6-174.23.

ers oppose other views of the status of the differentia.[205] David (Elias) explicitly attacks Porphyry for holding that the differentia is a nature intermediate between substance and accident. This intermediate nature, which was taken as participating in both extremes,[206] was developed into a threefold division of differentiae, also found in the commentaries of Ammonius and Philoponus. In fact, Philoponus notes,[207] these people thought that Aristotle did not assign the differentiae to substance or accident because he had the entire extension (ὅλον τὸ πλάτος) of the notion of differentia in mind. The division is the following (cf. Philop. *in Cat.* 64.22-65.7):

1. a differentia which participates more of substance and less of accident; e.g. (ir)rationality, which is more like a substance because it is completive of substance and comprised in the definition; on the other hand it is considered something of an accident because the differentia is predicated in quality$_p$, which is one of the categories of accident.[208]
2. a differentia which participates equally in substance and accident; e.g. hotness in fire or whiteness in snow, which are substance inasmuch as they inhere in qualified body (πεποιωμένον σῶμα) when they are completive of substance, whereas they are accidents insofar as they inhere in unqualified body (ἄποιον σῶμα).
3. a differentia which participates less in substance and more in accident;
   e.g. whiteness in the swan or blackness in the raven or the Ethiopian, all of which, Porphyry is claimed to have said, might conceivably vanish without affecting their substrate essentially. Yet, they are considered substances because they belong to *all* swans, ravens or Ethiopians respectively. These features are considered differentiae because they differentiate, e.g. between Scythian and Ethiopian.

This threefold division is different from the one we saw in the previous section. In fact it is a further development of option (2b) listed there, itself one option of the view which allotted to the differentia an intermediate nature. Furthermore, the division in the previous section presented itself as a division of the specific differentia properly speaking, and inseparable accidents are explicitly excluded. This division, however, seems to have borrowed something from Porphyry's more gen-

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[205] Amm. *in Cat.* 46.10-19; Philop. *in Cat.* 64.22-66.12; David (Elias) *in Cat.* 173.13-35.

[206] Compare above, option (2b). Cf. n. 190 above.

[207] Philop. *in Cat.* 66.2-5.

[208] Philop. *in Cat.* 64.28-29 has, more prudently: 'predicated in quality, which is also the case with accidents'.

eral division of the notion of differentia in his *Isagoge* (8.7-12.11). There a difference caused by an inseparable accident is listed as a 'differentia in a peculiar sense' (ἰδίως διαφορά) which, judging from the examples, seems to reappear in our division here under (3). Also option (2) confuses inseparable accidents with differentiae proper in treating the whiteness of snow on a par with the hotness of fire. In short, though this division reflects some kind of division of the notion of differentia, it does not agree with the accounts of Porphyry or his successors which have been preserved.

Option (2) has an interesting feature in that it applies Porphyry's distinction between first and second subject, but now with a different first subject. We saw how Porphyry, in agreement with his claim that forms are in matter as in a substrate, tried to save Aristotle's definition of accident by pointing out that all qualities inhere in qualityless matter (ἄποιος ὕλη) as in a substrate, whereas some qualities do not inhere that way in 'what subsists commonly or peculiarly qualified' (κοινῶς ἢ ἰδίως ποιόν). As far as inherence in matter is concerned, we saw that all commentators rejected Porphyry's interpretation. We now see that, quite in line with this rejection, the Alexandrian school came to understand Porphyry's distinction between subjects as if everything is an accident of *unqualified body*, the level between prime matter and the elements. Consequently, some characteristics are said not to be accidents of *unqualified body*. In fact, the text we may regard as most informative on Philoponus' earlier view of the position of the three-dimensional (*in Cat.* 65.8-66.5) is an excursus on the exact meaning of this second type of differentiae (third in Philoponus' listing).[209] And because we are already familiar with Philoponus' vocabulary, we need not be surprised that Philoponus glosses unqualified body as 'the three-dimensional'.[210] It seems clear that the commentators' presentation of earlier views was influenced by later developments and seems to be an indication of the views of the commentator.

Although Ammonius and especially Philoponus devote much space to the exposition of these doctrines, and even consider them a clever effort, all of it is reduced to nothing by the simple remark that no kind of intermediate is acceptable because the division between substance

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[209] Since this passage does not have a parallel in the other report of Ammonius lectures on the *Categories* (Amm. *in Cat.*) it is difficult to decide whether all this is Ammonius' doctrine or one of Philoponus' elaborations.

[210] Philop. *in Cat.* 65.34.

and accident is exhaustive. Moreover, an intermediate nature would constitute an eleventh category. We see that Ammonius and his followers intend to *defend* Aristotle's scheme of categories against what they regard as a threat—even though, as I suggested, an intermediate nature *participating* in both categories may itself have been an attempt to avoid the introduction of a new category.

After this refutation of earlier doctrine several arguments are brought forward in support of the claim that Aristotle intended differentiae to be substances (Philop. *in Cat.* 66.13-25):

1. Differentiae are completive of the species. Hence they are substances themselves, for accidents are not completive: otherwise substance would consist of accidents.
2. Differentiae are essentially predicated of the species; Aristotle emphasizes that differentiae as well as substances are predicated synonymously (*Cat.* 3 a 33-34).[211]
3. Aristotle explicitly draws attention to the fact that parts of substances are substances (*Cat.* 3 a 29).[212]
4. Porphyry, giving an exposition along Peripatetic lines (*sic*), says: "the differentia is that by which the species exceeds the genus" (*Isag.* 10.22-11.1). The species must exceed the genus by one of its parts; so the differentia is a substance because the species is.

Interestingly, being completive and being a part are not supposed to be equivalent as in Porphyry. Being completive (1) is contrasted with the view that substances consist of (matter and) accidents, whereas being a part (3-4) is taken from Aristotle's text as well as Porphyry's so-called 'Peripatetic' account of the differentia in his *Isagoge*. It is an irony that Porphyry, who introduced the idea of an intermediate, is now cited in support of the interpretation that the differentia is a substance.

It is important to note that the first argument is repeated at length in *Contra Proclum* XI.5 422.4-423.13 in order to rebut the claim that three-dimensionality is an accident because it is a quantity. Our suggestion that Philoponus had the discussion on the categorial status of the differentia in mind in XI.5 is now confirmed. Moreover, Philoponus had already discussed the absurdity that accidents are parts of substances as an aporia in his lemma on *Cat.* 3 a 29. This probably means that the problem is a traditional one, and was perhaps first raised by Lucius and Nicostratus. In his commentary Philoponus

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[211] Cf. Philop. *in Cat.* 70.23-28.

[212] The corresponding commentary (Philop. *in Cat.* 68.13ff) indeed takes parts primarily as differentiae.

solves it along familiar lines, by regarding differentiae as completive parts of substances (Philop. *in Cat.* 68.13-23), which is the third argument here.

However, in *Contra Proclum* XI.5 this way is not open to him: body-as-such, being only a part of the composite substance (see T9), is not itself a composite substance. In the *Categories* the rule that parts of substances are substances is applied to composite substances only, so that strictly speaking the differentia of body-as-such is not a substance in virtue of that same rule.[213] Hence, in XI.5 Philoponus emphasizes only the first argument: three-dimensionality is not an accident but an essential and constitutive quantity of body-as-such. To compensate, he claims that another characteristic of substance, viz. being self-subsistent, applies to three-dimensional extension and adds that three-dimensional extension constitutes the essence of body-as-such all by itself (424.6-11).

Turning now to the second argument for the differentia's substancehood in Philoponus' *in Categorias*, we find that it shows yet another familiar pattern: the category is derived from the kind of predication, but now the differentia is said to be predicated *essentially* of the species and is therefore a *substance* (OP2) whereas the Athenian tradition was in favour of the category of Quality because the differentia is predicated in quality$_p$ (thus supporting OP1 or OP5).

Philoponus could have used this argument in XI.5 as well, but he chooses a different, rather surprising, strategy. In XI.5 423.15-18 he first aims at establishing that the differentia is a quality by pointing out that the differentia is predicated in quality$_p$. In support he provides the baffling argument that Aristotle claims that species and genera are able to delineate quality concerning a substance (*Cat.* 3 b 19-20, = Q5), *because* both genera and species participate in the differentia. This Philoponus believes to be the reason why they are able to delineate τὸ ποιόν in the first place.[214] Thus the notion of quality which is associ-

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[213] Of course one might say that body-as-such, itself a part of the composite substance, is a substance in virtue of the same rule, so that its differentia is still a substance because it is a part of a substance. Philoponus did not choose this (admittedly rather weak) alternative.

[214] Cf. Philop. *in Cat.* 74.7-10. If we take participation to be reflected by synonymous or essential predication, this is conceivable in the case of the species, but hardly in the case of the genus: it would contradict e.g. *Top.* IV.2 122 b 23-24.— The origin of this point is again a traditional problem in the commentaries: how can genera and species be predicated in the essence and yet delineate quality (Q5) concerning a substance? See Philop. *in Cat.* 73.16-21. The explanation Philoponus

ated with genera and species (= Q5) is explained by means of an argument which underlines the qualitative nature of the differentia (= Q1). However, at the same time there can be no doubt that genera and species of substances are substances themselves, and the same applies to the differentia. For Philoponus the essential aspect of the differentia determines the category it belongs to. Hence, in the *Contra Proclum* Philoponus uses οὐσιῶδες ποιόν and ποσόν as 'essential quality and quantity' (OP2): a quality and quantity in the category of Substance.

The conclusion that differentiae belong to the category of Substance immediately raises a problem: how are we to understand Aristotle's contrast between differentiae and substances at *Cat.* 3 a 21-22? From the Alexandrian tradition we may gather that Ammonius provided at least three different arguments:

1. The case of the differentia is similar to that of the unit, the point, and the now, none of which is explicitly ranked under a category. The reason is that these entities are not familiar to the people, and in the *Categories* Aristotle employs only familiar items. If someone objects that 'rational' and 'mortal' *are* familiar terms, it should be noted that the common people take these terms to refer to composites, e.g. rational animal, and not to the differentia taken separately, e.g. rationality.[215]
2. The division of substances shows that differentiae are simple substances, whereas the *Categories* is concerned with composite substances only. Therefore Aristotle can distinguish the differentia from substance, to wit: *composite* substance. We may conclude that the characteristic 'not being in a substrate' is found with both composite and simple substances.

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provides there agrees with our passage in XI.5: species and genera delineate quality because they participate in the differentia, which is an essential quality. Interestingly, Philoponus adds that the species participates in the differentia actually, the genus potentially (according to the Peripatetics) or actually (according to the Platonists). For the differences between Platonists and Peripatetics concerning the differentia see below p. 246ff. Amm. *in Isag.* 104.29-31 correctly explains these differences by the fact that Platonists speak of the genera before-the-many, whereas Peripatetics speak of the genera in-the-many. For the use of potentiality in this context see esp. Lloyd (1956) part II.

[215] Note how the two senses of the Greek expressions τὸ λογικόν, τὸ θνητόν ('rationality', 'mortality' on the one hand and 'the rational—or mortal—being or animal' on the other) are put to new use here.—Note that Anscombe (1961) 13-14, cf. 31-34 classifies the differentia as a substance because she assumes a strict identity between a primary substance and each part of its definition (genus and differentia respectively). For her, so it seems, Socrates is identical with the animal, the human being, or the rational being that he is. In this way 'the rational' is always parsed as 'the rational being' and therefore always regarded as a substance.

3. If we ask under which of the four groups that Aristotle distinguished earlier[216] we should classify the differentia, this should be the first group (not in a subject, said of a subject)—at least when we have the differentiae-before-the-many in mind, for they are universal substances. When we think of differentiae-in-the-many, it should be noted first that these are not properly called differentiae, if the differentia is defined as something said of *many* things differing in species.[217] Together with the genus and the species-in-the-many the differentia is called a part of the individual substance. But if one insisted, these differentiae should be called differentiae-in-the-individual, because they distinguish e.g. this man from this horse, this angel. Then they are classified in the fourth group (not in a subject nor said of a subject) as individual substances, since they are individual completers of the individual substance.

The reference to the division of substance under (2) requires some further comment. From the commentaries of Ammonius and Philoponus the following diagram can be composed (see next page).[218]

This diagram holds the key to the harmonization of the metaphysics of Aristotle's *Categories* and *Metaphysics* into one grand scheme of substance. Parts of it are already found in Alexander, Porphyry and Dexippus.[219] Whenever Aristotle's earlier and later writings seem to diverge, the difference can be explained with reference to the different kinds of substance under discussion. Of course this method presupposes a clear definition of the topic of each work (σκοπός) which is usually provided in the introduction of each commentary.[220] Each kind

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[216] See *Cat.* 2. These groups are, in the order in which Philoponus has treated them (*in Cat.* 28.3ff): (a) not in a subject, said of a subject; (b) in a subject, said of a subject; (c) not in a subject, not said of a subject; (d) in a subject, not said of a subject.

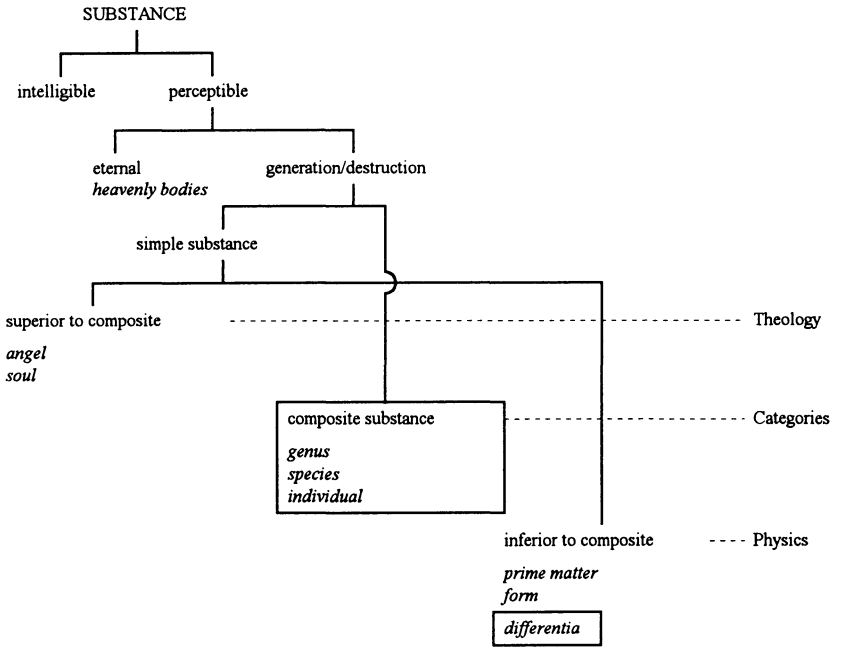
[217] In the same way, the genera and species in-the-many are not properly called genus and species, inasmuch as these are also defined by being said of *many*. Interestingly, Philoponus explains that this is the reason why individuals cannot be defined (Arist. *Metaph.* VII.15 1039 b 28ff): they have no proper genus and differentia.

[218] Cf. Amm. *in Cat.* 45.18-46.19; Philop. *in Cat.* 49.23-50.9, 67.7-17; *in Isag.* 195.12-197.14 Baumstark. On the history of the Aristotelian division of substance see Mansfeld (1992) 78-109.

[219] See Wurm (1973) 193-199, P. Hadot (1972). Alexander seems to have been the first to regard οὐσία as a genus embracing both intelligible and perceptible substance, see p. 101 n. 172.

[220] See e.g. I. Hadot (1990a) 139-141. Iamblichus seems to have taken particular interest in the question of the σκοπός of both Plato's and Aristotle's works, cf. Dillon (1987) 904-905.

Diagram 3 The division of substance



of substance is supposed to be treated in a different work. Here the differentia is classified as a simple substance, which agrees with its being part of the species or (though not properly speaking) the individual substance. Since the topic of the *Categories* is the composite substance, the differentia is rightly distinguished from it. It is not stated whether the differentia is supposed to be superior or inferior to the composite substance, but since it is regarded as a part of the composite substance, like matter and form, I assume it was considered a simple substance inferior to the composite.[221]

The third argument is found only in Philoponus' version of Ammonius' lectures. This is interesting in that the commentator knowingly transcends the limits of the *Categories* and indeed tries to classify the differentia according to Aristotle's criteria. However, only the groups applicable to primary and secondary substance are taken into account,

[221] This does not mean that the differentia would have to be treated in the context of physics, as Diagram 3 suggests; Philoponus does not mention the differentia when discussing the objects of physics.

and the differentia is in fact classified as a secondary substance, or (with reluctance) as a part of a primary substance. The Neoplatonic background of the commentators becomes most evident here: the familiar distinction between the differentia before-the-many and in-the-many (here even supplemented by differentiae in-the-individual) flatly contradicts Aristotle's ontology and gives precedence to the intelligible realm (before-the-many). It is noteworthy that 'being said of' is here translated into being a universal before-the-many, and not into being the less harmless universal after-the-many, which was a common fate for Aristotle's universals in the hands of the Neoplatonists.[222] In a sense, the Alexandrian tradition returns to Plotinus, who also regarded the differentiae as (aspects of) intelligible forms and hence as substances, with completive qualities as their activities (ἐνέργειαι). It is possible that this Neoplatonic angle provided the Alexandrians with an important motive to opt for differentiae as substances after all, and to reject the compromise solution introduced by Porphyry.

It is clear, however, that Ammonius developed a new approach. He stresses arguments that suggest the substantiality of the differentia and interprets the texts that suggest a connection with quality in such a way that they are no longer a threat to his position. Finally, even Porphyry's authority is enrolled. A full-fledged division of substance and a strict understanding of the topic of each of Aristotle's works does away with the most troublesome text of the tradition, *Cat.* 3 a 21-32. Aristotle's distinction of differentia and substance, which seemed to preclude its being a Substance, turns out to be harmless. Now nothing prevents the differentia from belonging to the category of Substance. This is the result that Philoponus invokes when he assigns three-dimensionality to the category of Substance, because, and inasmuch as, it is a differentia of body.[223]

3.6 Being as a genus

Up to now we have examined the problem of the categorial status of the differentia in the framework of the interpretation of Aristotle's *Categories*. We have been able to clarify why in *Contra Proclum* XI.5 Philoponus treats three-dimensionality, the differentia of body, as a substance without further explanation. However, the problem of the

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[222] See for instance Syrianus, below p. 247-248.

[223] From Philoponus' definitions we may gather that the genus of body is substance (*Contra Proclum* IX.11 346.5-7, *Opif.* 39.11-28).

categorial status of the differentia was not only discussed in the context of the interpretation of the *Categories* but also in the context of the interpretation of the *Metaphysics*. The important question whether Being is a genus over and above the ten categories, and the interpretation of Aristotle's statement that the differentia is a being, gave rise to a fierce debate between Platonists and Peripatetics.[224] I suggested earlier that the detailed examinations of the problem of the categorial status of differentia in the context of the interpretation of the *Categories* owe part of their *raison d'être* to the significance of this problem in the commentators' metaphysics which is reflected in their commentaries on Aristotle's *Metaphysics*. To conclude the examination of the Neoplatonic framework behind Philoponus' *Contra Proclum* XI.5, this section will be devoted to the *Metaphysics*.

Alexander not only discussed the question of the genus of the differentia in relation to *Cat.* 1 b 16-24, but also in his *Metaphysics* commentary. The occasion for Alexander's discussion is provided by *Metaph.* III.3 where Aristotle raises the trenchant question 'What are the principles and elements of being?'[225] Is it (1) the genera or rather (2) the immediate constituents of things?[226] After a series of considerations in support of the second (998 a 23-b 3) and the first alternative (998 b 3-11) respectively, he adds that 'some of those who say that Unity or Being or the Large-and-Small are the elements of being seem to treat them as genera' (998 b 9-11), which is no doubt a reference to the Platonic theory of principles.[227] Aristotle rules out the possibility of both options holding at the same time (998 b 11-14): the unity of definition does not allow the distinction between the definition of the genera and the definition stating constitutive elements.

In the next, seventh, aporia (if we follow the traditional numbering)[228] Aristotle takes up the first alternative again, but now refines it. If it is genera that are principles most of all, which genera are meant: (1a) the primary genera, or (1b) the lowest genera, which are predi-

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[224] The role of the Stoic highest genus in this debate is discussed by Brunschwig (1988). Cf. Mansfeld (1992) 88 with n. 28, 123-124, 128.

[225] On this passage and Alexander's treatment of it, see Madigan (1994).

[226] For discussion of this fifth aporia with a view to the commentators, see e.g. Tricot (1964) I 137-145 notes.

[227] Cf. Ross I *ad loc.*, Mansion (1955) 163.

[228] As my division shows, it seems defensible to regard the so-called seventh aporia as a further development of the sixth and hence not as an independent question. The numbering of Tredennick's Loeb edition (Cambridge Mass./London 1933) differs in this respect from that of Ross, Mansion, and Tricot.

cated of the individuals?[229] The first option (1a) should be chosen if it is agreed that universals are principles, because they are said of everything. In that case there are as many principles of being as there are primary genera, and Being (τὸ ὄν) and Unity (τὸ ἕν) would turn out to be principles and substances. After this second reference to Platonic theory, Aristotle objects:[230]

T43 But it is not possible that either Unity or Being should be one genus of beings. For the differentiae of any genus must each of them both have being and be one, but it is not possible for the species of the genus to be predicated of their own differentiae,[231] nor [is it possible] for the genus taken apart from its species[232] [to be predicated of its own dif-

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[229] Aristotle states that this is a matter of debate too. Pinès (1961) has made a plausible case for Xenocrates as a proponent of the view that the lowest genera have a better claim to be principles, because parts (species) have ontological priority over wholes (genera). Aristotle's philosophy may very well have been influenced by discussions of the views of Xenocrates, whom he finally surpassed in shifting the emphasis even further down to the immanent form as primary substance.

[230] Madigan (1994) 80 believes that 'the overall argument against kinds or genera as principles' fails because Aristotle rules out being and unity as genera. Then 'nothing Aristotle can show about being and unity will count against the claims of genuine genera or kinds to be principles'. However, the overall argument was supposed to be supported by the claim that what is most general is a principle. From this claim it follows inevitably that being and unity are principles (cf. *Metaph.* III.4 1001 a 21-22). If they are not genera, the support for the claim that genera are principles is ruled out effectively.

[231] Instead of *RevOT* 'predicated of the proper differentiae of the genus'. For in 998 b 24-25 (ἀδύνατον κατηγορεῖσθαι) τὰ εἴδη τοῦ γένους ἐπὶ τῶν οἰκείων διαφορῶν the adjective οἰκείων must refer to the constitutive differentiae of the *species*, not of the *genera*. Cf. Alex. *in Metaph.* 205.20-21 who explains οἰκείων διαφορῶν by ὑφ' ὧν εἰδοποιεῖται (*sc.* the species), cf. Tricot I 140 n. 2.—For reasons why species cannot be predicated of their differentiae, see *Top.* VI.6 144 b 9-11: the species has less extension than the differentia; if the species were predicated of the differentia, the latter would be a species of the species. Alex. *in Metaph.* 205.33-206.2 adds that since the differentiae are a kind of quality (e.g. rationality) it is impossible that e.g. animal is predicated of it, because animal designates a composite substance.

[232] Instead of *RevOT* which translates: '... it is not possible for the genus to be predicated of the differentiae taken apart from the (αὐτοῦ?) species'; *RevOT* have the interpretation apparently favoured by Alexander, *in Metaph.* 206.11-12 (cf. 206.30). The alternative Alexander suggests is 'for the genus to be predicated of *something else* apart from its species' *ibid.* 206.9-11. I follow the translation of Tricot I 141: '... il est impossible aussi que le genre, pris à part de ses espèces, soit attribué à ses différences', understanding ἄνευ τῶν εἰδῶν with the genus, because of αὐτοῦ. The phrase serves to direct attention to the divisive differentiae of the genus, and thus away from its species. Surprisingly, Tricot I 141 n. *sub* II explains 'c'est à dire si les différences (sic) *per se spectantur, sejunctae ab iis, quae inde efficiuntur, speciebus* (Bonitz 151)' although Bonitz obviously (and wrongly, I

> ferentiae]; so that if Unity or Being is a genus, no differentia will either be one or have being. But if Unity and Being are not genera, neither will they be principles, if the genera are the principles (Arist. *Metaph.* III.3 998 b 22-28; transl. *RevOT,* modified).

This is in fact the only passage where Aristotle tries to establish that the ten categories cannot be reduced to one or more higher genera. Elsewhere the conclusion that Unity and Being cannot be genera is merely assumed.[233] Nevertheless, for Aristotle it is a significant conclusion in his attack on Platonic thought on principles, since he believes it shows that the notion of participation is superfluous.[234] Of course, the Neoplatonist commentators, who happen to believe in Being and Unity as highest genera of the intelligible realm, have no need for this argument. As Syrianus impatiently points out,[235] Being, Unity and the Indefinite Dyad are the most illustrious productive causes and may only be called 'genera' with due caution. They should be distinguished from the proper conceptual genera which are theoretical constructs, posterior even to perceptible reality (τὰ ὑστερογενῆ καὶ ἐπιγεννηματικὰ τῶν γενῶν, *in Metaph.* 29.36). In the end, all Aristotle does is to show that a characteristic of the latter does not apply to the former.

Asclepius, reporting Ammonius' views of the *Metaphysics*, emphasizes the same distinction[236] and values Being and Unity as highly as Syrianus.[237] However, he is more inclined to compromise: he acknowledges that when immanent (co-ordinated, κατατεταγμένα) genera are

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believe) combined ἄνευ τῶν εἰδῶν with the differentiae. Compare Syrian. *in Metaph.* 31.28-34.—It seems unlikely to take 'the proper differentiae of the genus' to refer to the *constitutive* differentiae of the genus, for then it would itself be taken as a species rather than a genus.

[233] Ackrill (1963) 81. Compare *Anal.Post.* II.7 92 b 14 (existence is different from essence, because τὸ ὄν is not a genus) with J. Barnes (1975) 206-7; *Metaph.* VII.16 1040 b 16-24 (being nor unity are the essence of things); *Metaph.* VIII.6 1045 a 36-b 7 (the categories are not in being or unity as in a genus, neither of which is therefore present in their definition; they are at once one and being); *Top.* IV.6 127 a 26-39 (being and unity can be neither a genus nor a differentia because they accompany everything); *Top.* IV.1 121 a 15-19 (being cannot be a species for its extension would be greater than its alleged genus).

[234] Cf. Arist. *Metaph.* VIII.6 1045 b 5-12.

[235] See Syrian. *in Metaph.* 30.6-13, 31.23-32.4, 32.37-40.

[236] Ascl. *in Metaph.* 173.19-23, 177.2-6; cf. 173.26-33.

[237] Ascl. *in Metaph.* 176.11-20.

understood, Aristotle has a point.[238] But transcendent Being and Unity are genera, even of things which display a hierarchy,[239] inasmuch as they are productive of the differentiae and hence of all that is constituted out of them.[240] This attitude enables Ammonius to apply Aristotle's rejection of a *summum genus* when discussing whether Aristotle's presentation of the categories in *Cat.* 4 is an enumeration or a division proper. Division is ruled out for it would entail a common genus over and above the categories.[241] One need not be surprised that Ammonius does not show his dissent from the general rule (patent from Asclepius' *in Metaphysica*) in the commentary on the *Categories:* not only is its application in this context harmless for transcendent principles, but the *Categories* is regarded as an elementary work. Only when dealing with the *Metaphysics* is it appropriate (from a didactic point of view) to display the entire range of Neoplatonic sophistication.[242]

Let us return now to our issue: the occasion for raising the problem of the differentia. Alexander's commentary on the lemma 998 b 14-28 (*in Metaph.* 204.25-207.6) divides into two parts.[243] In the first part Alexander discusses Aristotle's argument and some fine points of textual exegesis (204.25-206.12); the second part is a critical remark of his own (206.12-207.6). This critical remark in fact constitutes a partial summary or perhaps an earlier version of the second half of the *Quæstio de differentiis specificis* discussed above.[244] I quote the remark in full:

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[238] Amm. *in Isag.* 101.6-105.14 discusses the question whether differentiae are in the genus actually or potentially. After rehearsing the Aristotelian and Platonic doctrines he concludes that the two views are compatible if it is realized that Platonists talk about genera *prior* to the many, the Peripatetics about genera *in* the many.

[239] Contrary to *Metaph.* III.3 999 a 6-14, cf. *EN* I.6 1096 a 17-23. The rejection of this tenet is characteristic of Neoplatonic logic, see Lloyd (1990) 76-85.

[240] Ascl. *in Metaph.* 178.34-179.14.

[241] Plot. *Enn.* VI.3 [44] 13.11-12 (note that *Enn.* VI.2 [43] 2.25ff accepts (the five Platonic) genera as principles for the intelligible realm, though he makes clear that the One, which is their source, should *not* be considered as an over-arching genus, VI.2 [43] 9; 3; 8.42-49); Porph. *in Cat.* 84.4, 86.11; Dex. *in Cat.* 39.6-15; Simpl. *in Cat.* 61.19-62.23 (= Iamblichus). —Note that all commentators thus defend the number of ten categories from early critical attacks. Cf. above p. 172ff.

[242] Philop. *in Cat.* 32.14-17 shows his belief in transcendent genera when arguing that because of its transcendence a genus is in each of its species as a whole, not merely in all of its species together (as a whole exists in all of its parts).

[243] This passage was briefly discussed by Madigan (1994) 80-81.

[244] Cf. p. 214ff.

T44 1. It seems to me that the discussion is rather dialectical (λογικωτέρα) as are the majority of [Aristotle's] remarks. For in whatever genus we classify the differentiae—for they must derive from *some* genus, if, that is, they are beings as well—in the case of the differentiae of that genus it is necessary that their own genus is predicated of them.

2. For either (a) [that genus] will have no differentiae in spite of being a genus, or (b) [the differentiae] will belong to the genus they divide.[245] For example, if all differentiae belonged to Quality, it is evident that the differentiae of Quality itself would belong to Quality. In that case the genus would be predicated of its own differentiae. For it would be fanciful and absurd to call all differentiae qualities except the differentiae of Quality, and to put them in some other genus instead.

3. So perhaps (b) the differentiae in each genus are in that same genus, i.e. in the same category.[246] For in some cases the proximate genus is not predicated of the differentiae because that [genus] is already something composite.[247] This occurs only with substances, since from the category of Substance a composite substance is derived too, which cannot be predicated of the differentia of the [composite] genus in itself (τῆς ἁπλῶς διαφορᾶς). Nevertheless, (c) [in those cases] the higher [genus] may be predicated, because it is more general and simpler. For Substance is common to both simple and composite substances.

4. So although animal is a composite and complex substance, and is therefore not predicated of the differentia taken in itself (καθ' αὑτὴν λαμβανομένη), nevertheless Substance is predicated of [the differentia]. Again, although Substance is predicated of the very differentia which divides animal, it has already been proved that the genus which is divided by the differentia is <not>[248] predicated of it. Such was [Aristotle's] statement as well. But even if this is true in some cases,[249] it is not impossible that *some* genus is predicated of the differentia

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[245] Cf. §3 Dietrich. The paragraph number applies to both Arabic versions, since Dietrich conveniently used the same numbering of paragraphs.

[246] Compare §4 Dietrich.

[247] Compare §7 Dietrich.

[248] The reading is suspect: ἤδη δέδεικται τὸ διαιρούμενον γένος ὑπὸ τῆς διαφορᾶς κατηγορούμενον αὐτῆς (206.31-32). I construe the argument as follows: (1) animal is not predicated of the separate differentia but Substance is; (2) this way it is proved that the genus which is actually divided by a given differentia is *<not>* predicated of it, which corresponds to Aristotle's statement; (3) this, however, is true only in some cases, not universally. If the contents of (2) must correspond to Aristotle's statement, which is subsequently qualified in (3), a negation must have dropped out in (2). This was also seen by Hayduck *ad* Alex. *in Metaph.* 206.32: ἤδη] an οὐκ ἤδη?

[249] I.e. when the proximate genus of the differentia ranges over composite substances.

> which divides [a genus]. For whatever divisive differentia of substance is taken, it is necessarily a substance.
> 5. However, genera do not seem to be predicated of the differentiae in the proper way, because of homonymy: e.g. διακριτικόν [occurs] in colours [= white] as well as flavours [= bitter]:[250] which [genus] shall be predicated of it?[251] For it is already a species when its proper genus is put together with it. (Alex. *in Metaph.* 206.12-207.6)[252]

The first paragraph contains the occasion for Alexander's digression: Aristotle's argument makes clear that the differentia is to be considered as a being (ὄν), which in itself warrants the question to what genus it belongs. If there is such a genus the differentia belongs to a genus after all. Note, however, that Aristotle's argument against the generic character of Unity and Being is only threatened when he is interpreted as if he wants the differentia to be a being *qua differentia*, which entails the question to which genus the differentia belongs *qua differentia*. This is the question Alexander discusses here and in his *Quæstio*, and it is because of this approach that he finds himself confronted with the rule of dialectic that a genus cannot be predicated of its differentia.[253] For on Alexander's interpretation this problem spreads to all differentiae in relation to all genera, and he has to find a general solution. On the interpretation advocated above[254] Aristotle merely states that each instance of a differentia is always itself a being—which may be classified under a genus (or category of being) regardless of its being a differentia. The problem only arises when the genus in question is Being itself, and the differentia helps constitute the first species of Being while itself already 'being': only in that case is the rule of dialectic violated, but not because the *differentia as such* is the issue, but because the case at hand is the differentia of *Being*.

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[250] In Plato *Tim.* 67 d 1-e 4 the term refers to the dilation of the light ray coming from the eyes which is characteristic of the colour white whereas black contracts the light ray (συγκριτικόν); cf. Theophr. *Sens.* 86.

[251] I.e. colour or flavour.

[252] Compare Diagram 2: (b) corresponds to (1) in the diagram, (c) corresponds to a special case of (6). On these points Alexander argues similarly in *De diff.*

[253] In *Top.* VI.6 144 a 36-b 3 Aristotle provides two reasons why a genus cannot be predicated of its differentia: (1) the genus would be predicated of the species twice, once of the species as a whole and once of its differentia; in the latter case the differentia would itself be a species of the genus, and with reference to that species the same problem would rise again *ad infinitum*; (2) since everything contained in the genus can only be a species or an individual, all differentiae would turn out to be either species or individuals, which is absurd.—Cf. *Top.* 122 b 12-24.

[254] See p. 188ff.

Furthermore, as we saw earlier, Alexander is not in the first place interested in the question to what *category* (i.e. *highest* genus) the differentia as such belongs. The problems with differentiae in the category of Substance cause a shift from the proximate genus to the highest genus available in the category of Substance: the category itself. Alexander remains faithful to Aristotle's tenet that the categories are ten *irreducible* genera, because according to him the highest genus available is the highest genus in the category the proximate genus of the differentia belongs to. In Simplicius we find a connection between *Cat.* 1 b 16-17 and the issue of a genus over and above the ten categories. He notes that one may show by means of the rule of *Cat.* 1 b 16-17 that the ten categories are irreducible and hence that the number of *ten* categories is correct.[255] For if it turns out that the differentiae of each category are different in kind, each category is a different genus, and they are not subordinate one to the other.[256] Needless to say, it remains obscure how this argument is to be reconciled with Simplicius' own choice for the differentiae as having an intermediate position.

As soon as Alexander has established that there is at least one genus which is predicated of a differentia, he presents us with a choice (§2): either (a) the entire problem is avoided by stipulating that the genus sought for has no differentia at all,[257] which is hardly satisfactory, or (b) each differentia belongs to the genus it divides. From this point

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[255] Simpl. *in Cat.* 59.33-60.4. The number of ten categories was disputed: Plotinus *Enn.* VI.1 [42] 1.11-12 notes defenders of more than ten categories as well as less than ten, e.g. the Stoics who have four (*Enn.* VI.1 [42] 25). He himself opted for the five highest genera of Plato's *Sophist* for the intelligible world (*Enn.* VI.2 [43] *passim*) whereas he considers seven, five or possibly only two categories for the sensible world (*Enn.* VI.3 [44], esp. VI.3 [44] 3). Cf. Porph. *in Cat.* 86.20-24; Dex. *in Cat.* I 36-38, 31.34-34.23.

[256] Unfortunately for Simplicius, however, in *Top.* 144 b 18-23 Aristotle watered down his rule by adding 'if they do not fall under the same genus'. Cf. Ackrill (1963) 76-77.—Many commentators mention the issue of Being as a genus in the beginning of their *Categories* commentary in relation to the order of treatment of homonymy and synonymy: since Being is homonymous according to Aristotle, homonymity is treated first. Cf. Porph. *in Cat.* 61.10; Dex. *in Cat.* 22.6-11, also I.39, 34.24-35.2; Amm. *in Cat.* 16.19-23; Philop. *in Cat.* 15.11-14; Simpl. *in Cat.* 21.24-22.1, with 33.23-24, 66.12-15; Olymp. *in Cat.* 28.13-18. See Luna in I. Hadot (1990b) 45-46.

[257] Unfortunately, Alexander does not elaborate on this option. Perhaps he means that the genus might comprise the differentiae as individuals so that the intermediate levels of species with their differentiae are skipped; individuals have no differentiae proper, for differentiae are said of many.

onwards (§2-4) the argument closely resembles the argument in the *Quæstio*. Again, differentiae are considered *simple* and cannot therefore be ranked under their proximate genus if it contains only *composites*, like the genus animal.[258] So if we have to find a suitable genus in the same category we must look further upwards in the division tree until we transcend the division between simple and composite substances and reach their common genus: the category of Substance. Differentiae of composite substances can safely be ranked under this genus, which is also a genus of the composite genus they happen to divide. Only with regard to the proximate genus of differentiae of composite substances does Aristotle's rule hold. Therefore this rule is not universally valid.

We have already seen that the additional problem concerning the category of substance explains why Alexander immediately resorts to *highest* genera, i.e. the categories. Here, the lemma from Aristotle's *Metaphysics* which provides the occasion for Alexander's digression treats of highest genera, and this may also have prompted Alexander to replace Unity and Being with the highest genera acceptable to Aristotle.

The fifth paragraph in a way qualifies Alexander's result, though several problems seem to run together here. Contrary to the rule of dialectic Alexander believes that some genera are predicated of their differentia, but he does not believe this to be predication proper (ἰδίᾳ) because of homonymy. The example of τὸ διακριτικόν shows what kind of homonymy Alexander has in mind:[259] the phrase τὸ διακριτικόν may denote a type of colour or a type of flavour which belong to different genera. *Top.* 107 b 9-25 employs the rule that differentiae of different genera are different in kind[260] to discover homonymy: if a suspect term is a differentia in two different genera, it is homonymous. Alexander is right to think that this possibility obscures the genus-differentia relation, for usually the differentia is thought to entail its proper genus and that genus only.[261] But of course this holds also of τὸ

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[258] Cf. Alex. *in Metaph.* 205.33-206.1.

[259] Properly speaking, a genus is predicated synonymously of its subjects, i.e. species and individuals, in the sense that both its name and definition apply, cf. *Cat.* 3 a 33-b 9. In the *De diff.*, however, Alexander explicitly argues that the category is predicated synonymously of the differentia of simple substances and all non-substance categories (§§ 8-9 Dietrich), so this cannot be the issue here.

[260] See p. 210ff.

[261] Cf. Arist. *Top.* 144 b 16-17; *Metaph.* VII.12.

διακριτικόν as soon as it is properly explained. Perhaps this paragraph reflects a doctrine discussed more elaborately in the *Quæstio*, viz. that we can only assign the differentia *to* a genus when it has already been combined *with* a genus to constitute a species. Even then, we now learn, homonymity may obscure our judgement.

Syrianus, whose commentary on *Metaph.* III.3 we have already consulted at the beginning of this section, explicitly discusses Alexander's remarks on the differentia.[262] His angle, however, is quite different even though his comments occur in his lemma on *Metaph.* 998 b 22ff. After a quick reminder of the traditional (Platonic) interpretation of genera, he summarizes Aristotle's argument, and, not without some irritation, remarks that if one really insists on calling Being and Unity 'genera', the argument would seem to prove that they are not principles—but this would very much upset the adherents of the Platonic position (*in Metaph.* 31.37-32.3).

Syrianus immediately retorts that every Peripatetic argument concerning differentiae stands in need of correction, for the Peripatetics are principally wrong on three counts (*in Metaph.* 32.4-15):

1. They do not tell us where the differentiae come from, though they do not believe them to be included in the genera;[263]
2. They do not explain how the genus can be predicated of the whole of the species if it does not contain the differentiae;
3. They do not distinguish between non-co-ordinated and co-ordinated differentiae, nor between differentiae of higher and lower species; they do not ask which genera possess the differentiae in actuality, and which are pre-existent subjects for the species like matter; nor do they ask which is the primary cause that produces the entire system of [differentiae] (πᾶσαν αὐτῶν παράγει τὴν σύστασιν), and which genera are only fit to be predicated of the species, representing the true causes of the species.

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[262] Syrian. *in Metaph.* 32.15-22: summary of Alexander; 32.22-37: criticism. If we assume that Syrianus would have addressed Alexander's answer to the infinite regress argument of the fourth objection (see p. 249), had he known the *De diff.*, we may surmise that Syrianus did not know this work; at least he does not show he used it. Given the parallels between the passage in *in Metaph.* (T44) and the treatise on the one hand, and the unanimous attribution of the *De diff.* to Alexander by the Arabic tradition on the other, Syrianus' silence can hardly be a reason for doubts about its authenticity.

[263] Cf. Lloyd (1990) 88-89. A more lenient judgement is pronounced by Ammonius *in Isag.* 101.6-105.14.

The extent to which Syrianus here depends on the logic of the Neoplatonic system hardly needs pointing out.[264] For our purpose the first point is important. It is true that Aristotle regarded the differentia as a qualification of the genus, and entered the genus 'from the outside' as the commentators called it.[265] There are good reasons for this: the way in which the genus is qualified in one of its species is not part of its own essence which 'precedes' its division into species. Furthermore, a genus is divided by opposite differentiae, but cannot be characterized by this conjunction of opposites itself because of the Law of Contradiction. On the other hand, the logic of the system requires that the differentiae are in a sense proper to the genus they divide, even to the extent that they entail it.

The Neoplatonist conception of a genus, modelled after Plato's Ideas, turns the genus from a conceptual tool into an actual intelligible cause, which *produces* the species.[266] In that case the differentiae which constitute the species must already be contained in the genus in actuality.[267]

In this context Syrianus introduces Alexander's discussion as a weird compromise between the Peripatetic and Platonic points of view. The proximate genus is not predicated of the differentia in order to avoid contradictory characteristics (Peripatetic), but the category is predicated of all differentiae that characterize its genera (Platonic). Again Syrianus lists a series of objections (*in Metaph.* 32.22-37):

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[264] A brilliant survey of the logic of genera in Neoplatonism is provided by Lloyd *o.c.* Ch. 3.

[265] It was Plotinus who criticized this issue in these terms, *Enn.* VI.2 [43] 5.24-26, and, significantly, took 'from outside the genus' as 'from outside the *category*'; cf. *Enn.* VI.2 [43] 19.3-5 where the genera of Being are concerned. As we saw, Alexander understood the phrase as 'from outside the *genus*, *sc.* the genus which is qualified by the differentia' and pointed to another genus within the same *category*. This escape route is blocked by Plotinus—though as far as I know he does not defend his interpretation of 'from the outside'. Cf. Lloyd *o.c.* 89, who quotes Plot. *Enn.* VI.2 [43] 5.24-26, and Mansfeld (1992) 87.

[266] Lloyd *o.c.* Ch. 3 speaks of 'quasi-genera', which head a so-called P-series, a series characterized by prior and posterior—exactly the kind of series Aristotle said the Academy did *not* accept as having a (regular) genus in *Metaph.* III.3 999 a 6-14 (compare Lloyd *o.c.* 86, who however seems to regard this tenet as a particularly Aristotelian one).

[267] Objections to potential differentiae are found in Amm. *in Isag.* 103.10-104.26, Elias *in Isag.* 84.19-86.1. Contrast Porph. *Isag.* 10.22-11.6 with Mansfeld (1992) 129.

1. The problem of contradictory characteristics now occurs at the level of Substance;
2. There is no reason why it would be impossible to divide substances into their differentiae as well as into their species;[268]
3. Why does not animal bear the same relation to man as Substance bears to animal? If it does, then animal is predicated of man's differentiae as well.
4. If Alexander maintains that differentiae are species of Substance, they must have their own differentiae, which would be substances too *ad infinitum*. On the other hand, if differentiae are not substances, where do they come from? Surely not from other categories nor out of the blue (ἀπὸ ταὐτομάτου).
5. When Aristotle says that a genus is not predicated of the differentia taken apart from the species, why do we say that differentiae which are [therefore] not *in* the species of Substance[269] are themselves in the category of Substance?

Syrianus' objections betray that he has a entirely different perspective from Alexander. The first objection is correct, but for the important fact that Alexander was not troubled with that particular problem when writing about the differentia. The problem of contradictory attributes has significance for Syrianus and not for Alexander, because it arises only on the Neoplatonic conception of the differentia existing *within* the genus instead of coming 'from the outside'. The second objection has a more strictly *ad hominem* character.

The third objection takes no account of Alexander's distinction between simple and composite substances, but concentrates on the strictly transitive relation genera have to their species and subspecies.[270] Contrary to Aristotle,[271] Syrianus finds no problem in predicating the genus of the differentiae since (and insofar as) they are embraced by the species. Apparently the genus as a generative cause warrants its being predicated of the entire species, including the differentia.[272]

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[268] Here Syrianus seems to counter Alex. *in Top.* 452.2-3: οὐκ εἰς διαφορὰς δὲ τὰ γένη διαιρεῖται, ἀλλὰ διαφοραῖς.

[269] Like Syrianus, Alexander interpreted ἄνευ τῶν εἰδῶν (*Metaph.* 998 b 25-26) as referring to the differentiae being considered apart from the species, see Alex. *in Metaph.* 205.28-30 (= the second alternative given in 206.9-12). Cf. above n. 232.

[270] Cf. *Cat.* 1 a 10-12.

[271] In the text under discussion, *Metaph.* III.3 998 b 25-26. Cf. *Top.* IV.2 122 b 18-24.

[272] In other words, Syrianus understands the differentia here as entailing the species, as in τὸ δίπουν = τὸ δίπουν ζῷον. Cf. Aristotle's distinction between the

The fourth objection was also raised by Alexander in his *Quæstio*.[273] The answer he provided was that the differentiae of the highest genera, being immaterial and simple, are *identical* with the species of those genera—which forestalls the infinite regress. This solution at once rules out Syrianus' alternative that the differentiae come from another genus.

Finally, the fifth objection highlights an absurdity: Aristotle says that the genus is not predicated of the differentia taken apart from the species of Substance. Precisely because the differentia is taken apart from these species, it loses its connection with Substance, so Syrianus seems to suggest. This is indeed plausible when the Peripatetic view that the differentia comes 'from the outside' is interpreted as 'from outside the category', instead of 'from outside the genus'. Nevertheless, Alexander claims that the differentiae also belong to the genus of Substance in their own right (καθ' αὐτάς). Then, of course, the genus of Substance must be predicated of them, which runs counter to Aristotle's explicit statement.

In short, Syrianus rejects Alexander's classification of the differentiae of substances as species of Substance (and hence as members of the category of Substance) on the basis of his Neoplatonic concept of genus. This concept of the genus as embracing the differentiae, already present in Plotinus,[274] sheds a different light on the status of the differentia. In Aristotle the genus lost its ontological primacy and the divisive and constitutive functions of the differentia are two sides of the same coin. The differentia which divides a genus is *ipso facto* constitutive of the species of that genus. Both genus and differentia exist only in the (individuals of) the species. Syrianus shows that the Neoplatonists retained the ontological primacy of the genus, which is reflected in the possibility of separating the divisive and constitutive aspects ontologically. A divisive differentia somehow exists within the genus (transcendent or immanent) before becoming constitutive. Moreover, it may be constitutive of transcendent and/or immanent species at different levels and at different times.[275]

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predication of the differentia on its own and as part of the definition of the species, suggested above p. 184.

[273] *De diff.* p. 177 Badawi, §6 Dietrich.

[274] See p. 247 n. 265.

[275] As Syrianus testifies, transcendent genera and differentiae are not proper (mind-generated) genera and differentiae; of course Aristotle's *Categories* applies to the sensible world only according to the Neoplatonists.

So when in *Contra Proclum* XI.5 Philoponus assigns three-dimensionality to body as its differentia and essence he relies on a long tradition of philosophical discussion of the problem of essential qualities and quantities. At least from the days of Lucius, Nicostratus and Alexander of Aphrodisias this topic had been on the philosophical agenda, and the continuous interpretation of puzzling passages in Aristotle's *Categories* and the important issue of being as a genus insured that it stayed there. Already in his *Categories* commentary Philoponus shows awareness of this history, and he appends an interesting account of the lowest levels of the universe when explaining one of the solutions to the problem of the differentia. In *Contra Proclum* XI.5, in the context of defending his new definition of prime matter, Philoponus recalls the issue of essential qualities and quantities. Here too sides with Ammonius against both the Peripatetic and Neoplatonic traditions and regards three-dimensionality as a substance because (and only because) it is the differentia, i.e. the essential quantity, of body.

CHAPTER FIVE

THIRD OBJECTION: MATTER IS FORMLESS

Among the arguments put forward by the defenders of the traditional notion of prime matter the necessity of its formlessness is the most important. Needless to say, formlessness excludes all determination, including extensionality and the corporeality defended by the Stoa. Thus it constitutes a major objection to Philoponus' view. In *Contra Proclum* XI.7 Philoponus takes up the challenge.

Philoponus summarizes the objection as follows: if the three-dimensional is prime matter, a form underlies forms; if not, the three-dimensional is not prime matter (XI.7 425.25-426.4). Since, we may add, it is absurd to say that a form underlies forms, and since it is widely accepted that matter is formless, three-dimensionality cannot be matter. Note that the absurdity is created by taking 'the three-dimensional' (τὸ τριχῇ διαστατόν) as three-dimensionality, a form, viz. the form which constitutes body as such.

Philoponus counters that the absolute formlessness of matter is merely a postulate, not a proof.[1] In the first part of his reply (426.4-24) he removes the sting of the argument by tacitly rephrasing the objection and contrasting 'formless' with 'something formed' (εἰδοποιημένον τι) instead of with 'form'. It is evident that things that have a form may serve as proximate matter at one level or another, and Philoponus lists several examples. Since his contemporaries already accepted the three-dimensional as a separate level between prime matter and the elements he can now simply point out that his opponents also say that the three-dimensional serves as (proximate) matter. Hence their objection to his view is contradictory to their own position. Philoponus assumes that the formlessness of matter is only acceptable as a universal truth if the notion of matter *always* entails formless-

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[1] For the opposition of proof (ἀπόδειξις) and postulate (αἴτημα) cf. e.g. Arist. *Anal.Post.* I.10, 96 b 33-34: 'a postulate is what is contrary to the opinion of the learner, which though it is demonstrable is assumed and used without being proved' (tr. J. Barnes [1975], following him in deleting ἢ). Philoponus asks for the proof which has not been provided.

ness—but the examples of proximate matter show that that is not the case.

Philoponus' straightforward rejection of the formlessness of prime matter as if it were merely a postulate, not a proof, is clearly a polemical move. For he is well aware that his opponents did provide an argument for their position, since he summarized it himself in XI.2:[2] if prime matter is to receive all forms without exception it cannot be characterized itself by any of them, since this would interfere with its perfect receptivity. However, Philoponus' point will be that the argument is not convincing, and therefore the proof is not delivered. For according to Philoponus all that is needed is that something's matter does not have, as one of the constitutive parts of its essence, the form of what it is the matter of.[3] In that relative sense each proximate matter can be called 'formless', down to and including the level of the three-dimensional. So if the notion of 'formlessness' is to be retained, Philoponus is willing to grant his opponents that much.

Philoponus goes on to argue that absolute formlessness is unacceptable (427.9-428.5). For nothing which *is* can be without natural principle (φυσικὸς λόγος), without the form which is the foundation of its essence and existence—even if it is inexpressible (ἄρρητος).[4] If matter is to belong to the things that *are*,[5] i.e. if matter is to be an existing

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[2] See Chapter 1 p. 29.

[3] It is noteworthy that it might even be possible to read Plato precisely in this way: *Tim.* 50 c 7-e 1 ἄμορφον ὂν ἐκείνων ἁπασῶν τῶν ἰδεῶν ὅσας μέλλοι δέχεσθαι might be translated as 'being formless (only) with regard to all those forms it is going to receive'. Compare Alex. *DA* 3.11-13.

[4] The expression φυσικὸς λόγος seems to point to a formative principle (after the example of the Stoic λόγοι σπερματικοί which came to be identified with immanent forms). However, ἄρρητος rather seems to imply λόγος in the sense of the definition stating the nature of that formative principle. This interpretation is confirmed by *Contra Proclum* XI.8 444.25-445.5, summarizing the conclusion of this argument, where λόγος τοῦ εἶναι is exemplified by 'rational mortal being', the usual definition of human being, and identified with εἶδος and φύσις.—An interesting parallel is Philop. *in Anal.Post.* 272.31-273.25, where Philoponus, discussing the status of universals, argues that the example of accidents shows that being does not require separate existence, for 'we say that [an accidental nature] belongs to the things that are and exists (τῶν ὄντων εἶναι καὶ ὑφεστάναι) because each is defined by means of a common definition (κοίνῳ λόγῳ ὥρισθαι) even though they have existence (ὕπαρξις) in individuals' (*in Anal.Post.* 273.12-13).

[5] Compare Arist. *Metaph.* 1042 a 32, b 9, 1044 a 15 (matter is οὐσία).—Contrast Plot. *Enn.* I.8 [51] 3.3-9, II.5 [25] 5.22-27, III.6 [26] 7.9-13 who tries to identify matter as a kind of non-being, after Plato's analysis of non-being in the *Sophist*; cf. Santa Cruz de Prunes (1979) 97-103, Hager (1962) 85ff. Plotinus does

physical entity (φυσικόν τι πρᾶγμα ὑφεστός), formlessness is out of the question. In view of the long-standing tradition associating matter with *non*-being or entirely potential being rather than actual being, this line of reasoning is striking. Philoponus seems to position himself over against Plotinus by alluding to the Plotinian phrase of matter as an empty word (κενὸν ὄνομα), a name without reference.[6] In section III we shall look further into the significance of this allusion.

So far Philoponus' reasoning is in agreement with the distinction between different perspectives on the same entity (e.g. composite vs. matter or element vs. matter) which we encountered above.[7] As long as the two perspectives are kept apart it is a matter of course, on the one hand, that something has a form founding its essence and existence, and, on the other hand, that it serves as matter in relation to some other form. In fact it can only come to serve as proximate matter in this sense *after* it has come into existence; it has to be something in its own right before it can come to be related to something else. Besides, we have seen that Philoponus wants his matter to perform a number of definite functions in nature: it must explain the fixed ratios observed in elemental change and it must account for divisibility. How can something which has no definition of its own play such a definite role in nature? Thus Philoponus reaches a more positive conclusion: not merely does the form which is three-dimensionality *not preclude* its being (prime) matter, but something which is to function as prime matter *must have* a certain formal determination and a certain power of its own .

Philoponus anticipates the criticism that being formed (εἰδοποιημένον) entails being composite (428.5-17). However, since three-dimensional extension does not change itself, there is no need to envisage its being a composite of matter and form. Therefore it is the primary substrate. This is the explanation of the sense in which prime matter is different from proximate matter—an explanation Philoponus' opponents did not provide. Besides, the notion of three-dimensional extension as such does not entail composition either—at least if Plato's

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however retain a bare notion of being, or presence, for matter since it is an indispensable requisite of the sensible world, e.g. II.4 [12] 12.22-23, I.8 [51] 15.1-3 (ὑπόστασις); see further below. Schwyzer (1973) 273 n. 33 notes that Aristotle's polemic (at *Phys.* I.9 192 a 3-6) shows that in Aristotle's time Platonic matter was regarded as absolute non-being.

[6] *Contra Proclum* XI.7 427.21; cf. Plot. *Enn.* II.4 [12] 11.13 (see T49).

[7] Cf. Chapter 3 p. 143-146.

analysis of the elementary bodies into triangles or even lines is rejected. In section II we shall discuss the arguments for matter's simplicity in more detail.

Though there can be no doubt that Philoponus intends his three-dimensional extension to be a form,[8] his wording in XI.7 does not systematically avoid associations with composition.[9] The term εἰδοπεποιημένον, 'imbued with form', suggests the distinction between form and that which has form. Philoponus' application of it to natural and artificial generation (426.10-21) and proximate matter in general (427.4-5)—though correct as an illustration of the relativity of formlessness—does not prepare us for the idea that he believes three-dimensional extension to be formed (εἰδοπεποιημένον) in the sense of *being* a form instead of *having* one.[10] Also the term ἀνείδεος, 'formless', suggests the presence of something which is different from the form it does not have. Moreover, Philoponus states that if prime matter does not *have* a formative principle in virtue of which it *has* being it does not belong to the things that are (427.13-15),[11] although two lines earlier he correctly speaks of the need for there *being* some physical principle of its existence (427.10-12). To this extent the arguments against composition constitute a correction of the associations of Philoponus' own terminology in XI.7.

Finally Philoponus concludes (428.18-25) that there is no argument that can establish the existence of incorporeal matter underneath the three-dimensional. The three-dimensional is the ultimate limit of analysis, and is therefore entitled to the name of first substrate or matter.

In the following sections some of the issues touched upon above will be examined in more detail against the background constituted by Philoponus' contemporaries and the Neoplatonic tradition he inherited. This will include the influence of Plotinus' discussion of matter as pure potentiality (*Enn.* II.5) which is part and parcel of the doctrine that matter is entirely formless. As we shall see, Philoponus addresses this issue separately in *Contra Proclum* XI.8.

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[8] This is clearly stated in the initial objection (425.27-28), confirmed in 427.8 and repeated later on in *Contra Proclum* XI.8 435.21-22.

[9] I am grateful to Richard Sorabji for making me aware of this issue; see T48 for an illustration.

[10] Cf. 428.3.

[11] Cf. 427.20, 28. The same relation seems to be implied in the genitives ἑκάστου (427.18), αὐτοῦ, τῆς ὕλης, αὐτῆς (427.24-25).

I THE FORMLESSNESS OF MATTER: A RELATIVE NOTION

In this chapter Philoponus is confronting one of the most strongly defended tenets of the traditional notion of prime matter: its formlessness. As we saw earlier, the formlessness of matter finds support in both Plato and Aristotle.[12] Plato states that formlessness is required if the receptacle is to be able to receive *all* forms without hindrance. From this perspective, all forms are equal. But on the other hand, the Demiurge's creation process may be taken to establish a hierarchy of increasing complexity in the sensible realm, from the elements upwards.

Aristotle's view is that the notion of matter is strictly relative to the (possible) reception of a specific form, which is not there yet (hence the concomitance of privation).[13] Besides, matter is associated with potential, not actual, being. It is important that there is not one common matter for *all* forms but that each form has its own specific matter; in this way all substances are arranged in an order of increasing complexity. Since the elements are the simplest physical entities, they can only come into being out of each other, at least if the same approach is to be maintained. Hence they can be regarded from two different perspectives: as formed bodies in their own right, and as matter in the transition of one element into another.[14]

As I see it,[15] the later tradition, both Peripatetic and Platonist, conceived of a blend of the two approaches to matter as part of their project of reconciling Plato and Aristotle. Plato's matter, common to all forms, was rediscovered on the lowest level of Aristotle's universe, in the common matter of the elements; in this way the traditional notion of prime matter that Philoponus is opposing was born. On the other hand, Aristotle's relativity was embraced to describe the levels of the Neoplatonic sensible universe. Both strands are reflected in Neoplatonist thought, even in Plotinus. Certainly, one aim of Plotinus' radical application of Platonic idealism was to secure the absolute lack of positive determination in matter and to make it stand out as the very

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[12] See Chapter 2 and n. 3 above.

[13] Cf. Philop. *in GC* 63.14-64.2.

[14] See Chapter 3 p. 143-146.

[15] As far as I know, only King (1956) 388-389 and Charlton (1970) 141-145 have pointed in the same direction. Of course only a full-blown study of the history of ancient interpretations of Aristotelian prime matter in relation to the *Timaeus* can back up this view, which will therefore have to remain only a tentative suggestion here.

opposite of true being. We have seen that this approach easily yields what has been called 'bundle theory': sensible 'substance' is nothing but a collection of reflections of intelligible forms without the possibility of differentiating between essential and accidental characteristics.[16] On the other hand, Plotinus seems to regard the change of the elements as particularly informative in reaching the notion of matter.[17] He accepts a kind of hierarchy within the sensible realm and even suggests that prime matter is not suitable to receive just every form, but only the forms of the elements.[18] While Platonic matter still served as the ultimate matter of all forms, to which they are all accidental, each sensible 'substance' could serve as proximate matter in Aristotelian fashion.[19]

Ultimately, however, the Platonic and Aristotelian perspectives on matter are irreconcilable. This is brought out by Plotinus who draws a sharp distinction between prime matter and matter in natural bodies such as animals and plants: the former is absolute matter, the latter merely relative. The two have nothing in common and correspond to the primordial Platonic division between the relative and the absolute. We have already seen how Porphyry followed precisely this route and retained a Platonic notion of absolute matter alongside an Aristotelian one.[20] Eventually prime matter became even more clearly dissociated from being the proximate matter of the elements when unqualified body crept in to take over that role. Or, to put it the other way around, it was less difficult for unqualified body to establish itself in view of the distinction Neoplatonic thought had already made between the two functions: prime matter and matter relative to the elements.

Philoponus' approach to matter partly reverses the tradition. There is a strong Aristotelian flavour in his emphasis on the relativity of the notion of matter. This relativity in itself already contradicts the Platonic notion of one entity (a 'third kind', *Tim.* 48 e 4) which is the matter common to all forms. Just like Aristotle, Philoponus draws on

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[16] See Chapter 4 p. 204.

[17] Plot. *Enn.* II.4 [12] 6.3-4. Of course the *Timaeus* also discusses matter in relation to the elements as the first products of the order the Demiurge imposes.

[18] Plot. *Enn.* VI.5 [23] 11.36-38. The significance of this text for Philoponus' account of the generation of the elements has been outlined above, p. 128-129 (T21); cf. p. 163 n. 100. As Robert Sharples suggested to me, Plotinus was perhaps influenced by Alexander in this respect, cf. Alex. *DA* 4.4-16.

[19] Compare Porphyry's solution to the problem of substantial qualities, above Chapter 4 p. 204-206.

[20] Cf. *ibidem*.

the simple fact of experience that in all higher level processes of generation, both natural and artificial, the role of 'matter' is performed by something which *in itself* already has some form or other. The change of perspective at work here is of paramount importance, as Philoponus points out more than once. For instance, arguing that proximate matter does not need matter in order to become matter, he explains:

T45 1. Suppose we take some proximate matter, e.g. smoothed stones, in order that they become matter of a house, [but we take them] not as [something] one and simple, but as a composite of some underlying stone and such-and-such smoothing. In that case we do not regard them as matter in the making any more, but as the generation of a form or composite, just as when somebody, wishing to make himself a seat, uses that stone and imposes the form of the seat on it.
2. If, on the other hand, we shall consider the smoothed and fitted stone as matter of the house, then one part of it will not be substrate and another form any more, but that whole will be taken as something one and simple: the smoothed and well-fitted stone. (For no matter is composed of matter and form inasmuch as it is matter; for in that way the result is an infinite regress, as we have shown above).[21]
3. So when a builder makes the matter of a house he makes the smoothed stone [taken] as one simple thing [the matter of a house]. For neither is a particular shape of the stone in itself—let us say the cube—the matter of the house, nor the unshaped nature of the stone taken in itself without shape, but the complex of both [taken] as one is matter of the house (Philop. *Contra Proclum* XI.10 453.9-454.1).

The argument is clear: as soon as something is regarded as matter, it should not be regarded as a composite any more or an infinite regress arises; conversely, if something is regarded as a composite, it should not be regarded as matter. Philoponus even suggests that Proclus implies as much when he says that stones including shape and smoothing become matter of the house.[22]

In *Contra Proclum* XI.10 Philoponus uses the argument to prove two different points:

a. Contrary to Aristotle's argument, which is adduced by Proclus (matter cannot be generated because another matter would be

[21] Cf. *Contra Proclum* XI.8 444.17-21; XI.10 449.9-13. See also IX.16 373.18-377.6 where the same example is used (at 373.24-374.11). Cf. Arist. *Metaph.* VII.8 1033 a 31-b 5.

[22] *Contra Proclum* XI.10 454.1-5, quoting *Aet.* XI 404.10-12. Rabe's addition in 454.4 <εἰ τύχοι καὶ ἁρμοσθῶσιν>, taken from 404.11, is not strictly necessary.

needed etc.),[23] Philoponus argues that matter does *not* need another matter in order to come into being, because the generation of matter is different from the generation of a composite. Only a composite needs matter in order to come into existence; when something is regarded as matter, that perspective *ipso facto* excludes its being regarded as a composite; consequently, it does not follow that another matter is needed for matter to come into being. Aristotle's regress argument fails, and so does Proclus' reasoning in *Aet.* XI which turns on it, as we have seen.[24]

b. When a composite comes into being, this event should not be regarded as the generation of matter. In this way several stages of a longer process, e.g. building a house, can be distinguished from each other and from the process as a whole. First each stage comes into being as a new composite of matter and form; subsequently, it is taken as a whole and serves as matter for the generation of a further composite, the next stage in the process.[25] For instance, when builders smooth stones, they constitute new composites; subsequently, they fit the smoothed stones together to build a wall for the house, etc.

Proclus had claimed that builders are working on 'what is not yet matter', without making the form of the house, which is only supposed to enter the material when the last tile is put on the roof. Now we can see that this interpretation is faulty: each part of the process is the realization of a form in matter, and so is building a house.[26]

This strict distinction of perspectives can also be put to use in refuting the claim that prime matter must be formless, at least if it is maintained that there is an analogy between prime matter and proximate matter. However, Proclus explicitly endorses this analogy in his eleventh argument.[27] Therefore the distinction of perspectives which has hitherto served to analyse instances of proximate matter only, can be brought to bear on prime matter too:

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[23] See Chapter 1 p. 3, §6.

[24] See Chapter 1 p. 5. For the context of this argument in XI.10, see below Chapter 6, p. 281-283.

[25] Note that at each stage the would-be-matter is first established as a composite with a form of its own. Philoponus transferred this aspect of the analysis of house-building to prime matter, see p. 282.

[26] For the context of this argument in Proclus, see Ch. 1, p. 9ff.; for Philoponus, see Chapter 6, p. 280ff.

[27] Cf. *Aet.* XI 404.14-17, with Chapter 1 p. 3, §§4-5.

c. That which, from one perspective, serves as prime matter in relation to the elements, may very well, from another perspective, have formal determination of its own. The fact that three-dimensionality is a form, does not preclude its serving as prime matter. The Platonic argument from the suitability of the receptacle to receive all forms without exception is misguided. Hence, the argument for the formlessness of prime matter turns out to be invalid.

It should be borne in mind that the analysis employed by Philoponus still yields a bottom layer of matter. In other words, it is not the notion of prime matter itself that is rendered superfluous, but only its traditional representative, formless incorporeal matter. Philoponus still follows the traditional argumentation in regarding the proximate matter of the elements, viz. unqualified body, as prime matter, except that he is willing to follow that reasoning through to its natural conclusion. Where his contemporaries still felt forced to assume an incorporeal prime matter because of the claim of formlessness (among other things), Philoponus can safely say that unqualified body can perform the task of prime matter.

No doubt Philoponus would not have thought of unqualified body if it had not already acquired a secure position between prime matter and the elements in Neoplatonic thought. Even so, in his refutation of the alleged formlessness of matter this development is convenient: not only is another candidate for the matter of the elements ready at hand, but he finds his opponents already admitting that the proximate matter of the elements is something which possesses a form. To the extent that the traditional argument for prime matter in Aristotle turns on the identification of the matter of the elements, unqualified body should be a candidate even for them. So with Aristotle's *GC* II.1 in mind, too, formless prime matter is simply superfluous.

As indicated above, the distinction of perspectives is not new in the *Contra Proclum*. In our treatment of Philoponus' solution to the problem of growth[28] it was already emphasized that he interpreted *GC* II.1 in a remarkable way. For he argued (T23) that being matter is the same for everything that serves as matter, whether water serves as proximate matter for air or v.v. In that well-defined sense there is one

[28] See Chapter 3, p. 138ff.

matter for everything.[29] We might want to say: there is one matter in the sense that matter's function is the same at all times; that is why we are allowed to speak of matter in cases otherwise different.

On the other hand, that which serves as matter is different in each case, because matter never exists separately *qua* matter. Therefore it is possible to consider and to designate that which serves as the substrate of the elements after the form with which it exists at any given time. According to Philoponus, this approach yields what is usually called proximate matter. For instance, when we say that 'water' is proximate matter for air, we designate matter by means of a name ('water') which does not so much capture matter as such but rather the form matter is unified with in its current physical existence.[30]

Because matter and form constitute a unity, to designate something as 'matter' or as 'water' comes to the same as to designate the whole of it as such. At least, this is how Philoponus interpreted Aristotle's phrase 'the same in number' in *GC* 320 b 12-15.[31] In other words, matter *coincides* with the element as a whole under a certain perspective. It seems well-advised to bear this dimension of the language of wholes and parts in mind in discussions concerning matter and form, at least in Philoponus; for matter and form are traditionally called '(constitutive) parts' or 'elements' of a composite substance.

The difference between *in GC* and *Contra Proclum* is of course that in Philoponus' interpretation of *GC* I.5 the three-dimensional is not set off as a level between prime matter and the elements which could serve as their proximate matter. The elements are explicitly designated as each other's proximate matter. In view of the history of three-dimensionality outlined in Chapter 2 this is somewhat surprising: Am-

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[29] Philop. *in GC* 63.14-17 (T24):"'Matter, [Aristotle] says, inasmuch as it is matter and it is whatever it is according to its own nature, is the same for everything which it underlies. For by saying *whatever it is* Aristotle [meant] the substrate *** for [with regard to] its own nature, so to speak, there is one matter for all. For inasmuch as it is matter it has a similar fitness in relation to everything."

[30] Philop. *in GC* 63.18-24 (T24): "Since its being and realization (ὑπόστασις) is always together with some form, it is not the same matter for all with regard to the form and existence (ὕπαρξις). [Matter] considered after the form is proximate matter, e.g. air is the matter underlying fire; [the matter] underlying air may happen to be actually water that way (*sc.* considered after its form), and [the matter] underlying water earth. Earth and air then underlie fire and water, and these [*sc.* earth and air] are the same according to the account of matter, but different according to the form, when they are no longer considered as first matter but as proximate matter."

[31] See Chapter 3 p. 146.

monius already maintained that three-dimensional extension serves as proximate matter for the elementary qualities. I suggest there is a two-fold explanation: in *in GC* I.5, concerned with growth, the relevance of unqualified body as the substrate of growth was explicitly denied when envisaged as a separately existing entity.[32] However, Philoponus did not consider unqualified body as a substrate immanent in an actual body; rather he focused on the elements. More importantly, it seems quite clear that Philoponus had not yet fully come to realize the insufficiency of the traditional notion of prime matter. After all, in spite of all subtleties prime matter is still considered incorporeal and formless in this carefully defined sense.[33]

Nevertheless, the combination of *in GC* I.5 and *Contra Proclum* XI.7 may shed some light on the problem of the meaning of the phrase 'the three-dimensional' in Philoponus' new account of prime matter. In his definition of body as such in XI.3 he wrote:

T46 [By 'matter as such' and 'body as such' ...] I mean what is in existence and has already become a part or even element of the composite, though according to its own definition it is free from any of the qualities which it is able to receive one after the other. So this I call 'body as such': that which is determined by the three dimensions, because in itself it is neither hot nor cold, nor heavy nor light; nor does it receive any such further determination according to the characteristic definition of its nature, so as to be called a heavy body or a hot body. Let 'body as such' be understood in this sense everywhere. (Philop. *Contra Proclum* XI.3 414.7-17 = part of T9)

So in each composite substance there seems to be a *constituent part* which may be called 'body as such'. Because Philoponus asks us to focus on a *part* of the composite we are led to believe that 'the three-dimensional' designates three-dimensionality itself rather than the three-dimensional thing, i.e. the composite as a whole inasmuch as it is three-dimensional. This is indeed correct, because three-dimensionality remains while the composite changes: therefore three-dimensional extension can be regarded as prime matter.

However, the notion of 'part' needs a further qualification. From *in GC* I.5 we learned that matter, though designated as a 'part' of the composite, is identical with the composite in substrate, number and

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[32] *In GC* 73.18-74.3, cf. Philoponus' survey of *GC* I.5 in Chapter 3, p. 140, under Ic.

[33] See p. 144, T23 §2 (formless), §3 (incorporeal).

place.[34] In other words, we are dealing with *integral* parts that are present throughout the entire composite, not as more or less self-contained units like a hand or a head. When we apply this notion of part to the definition in T46, we find that 'body as such' will also denote the composite as a whole inasmuch as it is three-dimensional. When parts coincide with the whole in this specific sense, the distinction between 'the three-dimensional' taken as the property (three-dimensionality), and 'the three-dimensional' taken as the bearer of that property (the three-dimensional thing) is reduced to a change of perspective; the parts do not differ in any spatial sense. Nevertheless, this complication should not deter us from assuming that in his definition of 'body as such' (T46) Philoponus wants us to focus on the part or aspect rather than the composite as a whole.

Next, we may attempt to apply anew what we learned from the *in GC* about the relation between prime matter and proximate matter. Philoponus concludes that 'the three-dimensional' is prime matter, and we have seen that for him the analysis in terms of proximate matter is decisive. Each proximate matter has a formal characteristic apart from its functioning as matter; it is the same in the case of 'the three-dimensional' inasmuch as it is a form itself. However, we cannot gloss the expression 'the three-dimensional' as designating prime matter in the same way as the term 'water' is used to designate prime matter in *in GC*, viz. after the form with which prime matter is unified at a given moment in time. Such a differentiation between proximate matter and prime matter is not appropriate any more since three-dimensionality is not a form which is unified with an underlying matter at all. Hence the level of three-dimensional extension which was discovered as the proximate matter of the elements (with a positive character of its own), now turns out to be prime matter as well *under the same name*. In other words, the first substrate has gained a second name: 'the three-dimensional'. Of course this second name is the result of the fact that prime matter *as such* has a definite character now, viz. three-dimensional extension, whereas in *in GC* Philoponus had no other choice than to use the term '(prime) matter'; for traditional prime matter was entirely formless. On the other hand, nothing has changed as far as the elements are concerned: it is still possible to say that 'water' is the proximate matter of air, because 'water' is still a desig-

[34] See Chapter 3 p. 146.

nation of prime matter (now three-dimensional extension) after the form it is unified with in order to exist.

This brings us to a further difference between the *in GC* and the *Contra Proclum*: in the *in GC* the positive description of matter ('water') was derived from the form together with which prime matter constituted an independently existing whole. Now 'the three-dimensional', though representing a formal determination, does not designate an independently existing whole but merely a theoretical level of analysis. In Philoponus' days Neoplatonism posited two such levels: prime matter and unqualified body. Philoponus reduces them to one level: unqualified body, which may also be called prime matter. The availability of another, more informative, name for prime matter may explain the casual way in which Philoponus dismisses a quarrel over the names of 'first substrate' and 'matter' in *Contra Proclum* XI.7 428.23-25.

II THE SIMPLICITY OF THREE-DIMENSIONALITY

The distinction between perspectives described above also warrants the simplicity of three-dimensional extension *qua* matter: no matter as such is to be regarded as a composite, under penalty of an infinite regress. This kind of simplicity was hardly a matter of debate: we have already seen that Proclus *in Tim.* I 384.5-6 accepts Aristotle's argument to this effect as proof that matter is not generated in the sense of a composite.[35] Earlier statements of the same kind are to be found in Alexander of Aphrodisias[36] and Plotinus.[37]

However, in order to defend the rejection of a formless prime matter Philoponus must also establish that three-dimensional extension *as such* is not a composite either. This he achieves by a twofold approach, discussing both the extension and intension of the term.

'Extensionally' speaking, three-dimensional extension does not consist of matter and form; it is merely volume (ὄγκος). Only if a change of volume entailed a change of three-dimensional extension as such, would it be necessary to assume an underlying matter in order to account for that change. However, in *Contra Proclum* XI.4 it has al-

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[35] See Chapter 1 p. 7-8. Cf. Philop. *in GC* 228.4-7.

[36] See Alex. *DA* 3.21-5.1 who contrasts absolute matter (non-composite) to relative matter (composite).

[37] See e.g. Plot. *Enn.* III.6 [26] 9.38.

ready been proved that three-dimensional extension does not need a substrate for that reason, since it does not change essentially in any physical change whatsoever. Philoponus explicitly reminds us of this argument here (XI.7 428.19-20).

The absence of this kind of composition warrants the use of the term αὐθυπόστατος in relation to three-dimensional extension. As has already been noted earlier, in an Aristotelian context this term does not refer to the 'self-constituting' intelligible principles of Neoplatonic metaphysics.[38] Two sections from Philoponus' *Physics* commentary may clarify the issue. In the *theoria* on *Phys.* 189 a 21ff. Philoponus explains that οὐσία in 189 a 29 is used in virtue of τὸ αὐθυπόστατον:

T47 1. Here [Aristotle] calls 'substance' that which is self-subsistent (αὐθυπόστατον) and does not need a substrate for its being (εἶναι), as he also does in the *Categories*.[39] Because here he presents the argument in an aporetic fashion, and the composite substance is self-subsistent and does not have its being in something else, therefore, since self-subsistence belongs to [the composite substance] more because of matter than because of form (for the form needs a substrate for its existence (ὕπαρξις), matter does not need a substrate)—therefore he calls matter to a higher degree a principle and cause of the composite substance. For although matter desires form, it does not do so in order to exist, as form needs matter for its existence, but in order to be determined and ordered. In this sense he called matter substance because of its self-subsistence, and he says that the principles of the self-subsistent composite substance must themselves also be self-subsistent.[40] (Philop. *in Phys.* 137.27-138.10)

(...)

2. I say that even if matter is never without form, it is prior by nature: for [matter] removes [form] along with it, not the other way around. For if we separate the forms from [matter] in thought, we can hypostasize [matter] in thought (for it does not need another substrate for its being), whereas the form cannot exist without matter even in thought.[41] And if God created the things part by part,[42] which would

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[38] For which see e.g. Whittaker (1975), Gersh (1978) Appendix. Cf. p. 168 n. 13.

[39] See *Cat.* 2 a 11-13, with Philop. *in Cat.* 49.16-20; cf. *in Cat.* 46.15-16, 53.9-10, *in Phys.* 39.12-13.

[40] Philoponus goes on to explain, *in Phys.* 138.10-14, that it would be absurd if the non-self-subsistent were the cause of the self-subsistent, because that would reverse the natural priority.

[41] Note how a thought experiment serves to show that even the *notion* of matter does not require another substrate, after it has been pointed out that matter as such never exists without form in reality; compare Alex. *DA* 6.17-20. Cf. the similar transition from real composition to the *notion* (ἔννοια) of composition in our chap-

> he create first?[43] It is clear that [he would first create] the substrate that is to receive the forms, and subsequently that which has to exist in it. So the substrate is prior by nature, and in that sense it is to a higher degree a principle of the composite substance. This is not because the form is not a principle, but, as I said, he presents the argument in aporetic fashion, so as to show that he needs the substrate for the account of the principles by necessity. (Philop. *in Phys.* 138.20-30)

In short: the notion of self-subsistence is derived from Aristotle's *Categories* and serves as a technical term to denote 'not being in a substrate' (οὐκ ἐν ὑποκειμένῳ) which is the primary characteristic of substance in the *Categories*.[44] Philoponus believes that that sense of οὐσία is not only applied to the composite substance (as in the *Categories*) but also to matter in *Phys.* 189 a 21ff. In fact, the composite substance is said to derive its self-subsistence in this sense from its matter rather than from its form. For in this way matter is prior to form, notwithstanding the fact that matter never exists without form.

It should be clear by now that there is nothing special in calling three-dimensional extension self-subsistent if it serves as matter. However, since it is the primary substrate, it is without substrate absolutely, not merely in the relative sense in which each matter *qua* matter lacks a substrate. We should add that inasmuch as the three-dimensional is a substance because it is the differentia of body (see Chapter 4), it would have a claim to the title of self-subsistence for that reason too.

In view of our earlier description of the development of the analysis of the elements,[45] we may conclude that Philoponus follows Aristotle in rejecting a Platonic-Pythagorean analysis of physical solids through

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ter, see below.—Lacey (1993) 157 n. 244, following Vitelli (*app.crit.* to Philop. *in Phys.* 225), contrasts our text with 225.5-11 where Philoponus states that substantial forms can be envisaged separately from matter. However, there is no inconsistency, because there is a clear difference between separating forms from matter in thought and envisaging them as two different things (*in Phys.* 225.5-11), and to envisage in thought that forms exist without matter (*in Phys.* 138.22-25). The latter is a conceptual impossibility, the former is not.

[42] Note how κατὰ μέρος can be used to describe the sequential creation of matter and form, as μέρη of the composite substance.

[43] The irrealis once again confirms *concreatio*. It is tempting, though unnecessary, to write God with a capital in order to distinguish the Neoplatonic Demiurge from the God of the Bible. However, if this illustration originates from Philoponus the latter cannot be excluded.

[44] Furley (1991) 40 n. 43 (or rather the anonymous reader he refers to) is therefore mistaken.

[45] See Chapter 2 *passim*.

surfaces and lines down to points. His strict adherence to the distinction of perspectives will certainly have contributed to that result.

'Intensionally' speaking, the concept of three-dimensionality does not imply composition either. To this end Philoponus feels obliged to reject Plato's analysis of body into planes,[46] as well as the mathematical analysis of the three-dimensional solid into lines (and points, we might add).[47] However, his rejection is rather casual and without argument. This is in line with other testimonies of Plato's theory of triangles elsewhere in Philoponus, where it never meets with approval. In *Contra Proclum* XIII.18 531.22-532.11 Plato is even described as 'very much a geometer' (γεωμητρικώτατος) who cannot help himself applying mathematical procedures to physics.[48] His construction of the elements out of triangles is taken to be 'rather symbolical' (συμβολικώτερον). Elsewhere[49] Philoponus approvingly quotes Alexander **in Cael.* who argued that mathematical analysis is not applicable to natural generation. This is part of an argument designed to reject the interpretation of the *Timaeus* as merely an expository account, not to be taken literally. When mathematicians draw a diagram by way of illustration, Alexander says, the constitutive parts of the diagram are not on the same footing as the constitutive parts that make up a new whole in natural change. It is noteworthy that in *Quæst.* II.13 Alexander defends the view that for Plato the triangles had a material rather than a formal role. This would explain why earth, which consists of cubes made of isosceles right-angled triangles, cannot be transformed into the other elements, which are made of half-equilateral triangles. Indeed, if the triangles had a formal role to play the elements would have one common matter and the exception of earth would be inexplicable. Inasmuch as Philoponus seems to regard the triangles as a rival theory to his own view on matter he may well reflect a similar interpretation of Plato.[50]

In general, this negative approach to Plato's triangles reflects Aristotle's criticism of Plato's method in *De caelo* and *De generatione et*

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[46] Plato *Tim.* 53 c 4-55 c 6.

[47] Cf. *Contra Aristotelem* fr. 30 W., apparently reflecting an argument to the effect that the analysis of three-dimensional body into the three dimensions runs into difficulties when the status of beginning, middle, and end has to be assigned to each of the dimensions separately.

[48] Cf. XI.14 459.25-460.7.

[49] See *Contra Proclum* VI.27 217.16-221.22.

[50] See Chapter 2 p. 107. I owe this reference to Robert Sharples.

corruptione.[51] In his commentary on the latter work Philoponus explains the arguments with only an occasional sign of disagreement, though he never actually defends the theory of triangles.[52] It is quite possible that Philoponus' casual dismissal of Plato in *Contra Proclum* XI.7 428.14 simply relies on those Aristotelian criticisms, which of course it is now convenient for him to endorse. On the other hand, the rejection of Plato's theory also has substantial impact as a polemical dig at his opponent. For we know that Proclus wrote extensively in *defence* of Plato's theory of triangles against Aristotle: Simplicius has preserved large portions of Proclus' work in his commentary on the *De caelo*, where he appends Proclus' answers to each lemma of Aristotle's criticisms.[53] Hence it is certain that Simplicius would not have consented to Philoponus' off-hand rejection of this kind of composition of unqualified body as such. Consequently, Philoponus' argument is less satisfactory on this point.

To conclude, Philoponus is alive to the fact that his argument that something formed (εἰδοπεποιημένον) can be matter because every proximate matter has a form of its own, can be turned against him. An opponent could argue that if three-dimensional extension is so much like proximate matter, it should also be analysed as a composite of matter and form like every other proximate matter. Philoponus makes clear that three-dimensional extension does not need a substrate if it does not change in any physical change, and that he regards it as a simple notion which is not further analysable.

III FORMAL DETERMINATION AS A PREREQUISITE FOR BEING AND EXISTENCE

In XI.7 427.10-428.5 Philoponus rather boldly expresses the idea that everything that *is* has formal determination (εἶδος), and argues that prime matter must have such a formal determination as well. It is sur-

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[51] Cf. Arist. *Cael.* III.1 299 a 1-300 a 19, III.8 306 a 1-307 b 24; *GC* I.2 315 b 28-32, II.1 329 a 21-24.

[52] See e.g. Philop. *in GC* 6.8-13, 25.10-19 (*ad* 315 b 28), 25.31-26.6 (*ad* 315 b 30), 81.7-31 (*ad* 320 b 14), 164.5-7 (*ad* 325 b 33), 209.5-210.4, 210.7-16 (*ad* 329 a 21) etc.

[53] See Simpl. *in Cael.* 640.21-27 for the announcement of this procedure in his *theoria* at *Cael.* III.7 306 a 1. For the Neopythagorean revival which is presumably partly responsible for the Neoplatonists' interest in Plato's triangles, see Chapter 2 p. 87ff.

prising to find Philoponus arguing from the assumption that matter has to be something that *is*, since many distinguished predecessors were rather inclined to associate matter with non-being or at the most completely potential being. In order to find Philoponus' source of inspiration for this chapter, we have one important lead to go on: Philoponus alludes to the expression of matter as an 'empty word' (κενὸν ὄνομα), which is well-known from Plotinus.[54] Let us have a closer look at Philoponus' text:

T48 1. If such a thing [*sc.* matter] belongs to the things that *are* at all, there must definitely be some physical principle of its existence (λόγος τῆς τούτου ὑπάρξεως), even if that be inexpressible for us. For if it does not have any λόγος, in virtue of which it exists (ὑφέστηκεν) and has being (εἶναι), it will not belong to the things that *are*.

2. For each thing that *is* has some physical principle, in virtue of which it exists. If so, then nothing that *is,* is formless: for each thing's physical principle in virtue of which it *is,* is each thing's form and essence (εἶδος καὶ οὐσία); conversely, each thing's form, being completive of its essence, is a physical principle, in virtue of which it exists.

3. Therefore matter, too, if it is not an empty word but some physical existing thing (φυσικόν τι πρᾶγμα ὑφεστός), must clearly have a principle, in virtue of which it exists. Each thing's principle of existence is its form and essence; so also the principle of matter, in virtue of which it *is*, is its form and essence. (Philop. *Contra Proclum* XI.7, 427.10-26)

A formative principle (λόγος) of existence, a form (εἶδος), an essence (οὐσία) guarantees that something has *being*; without them it is not an existing physical thing (§§1-2). To be a physical thing with real life existence is the opposite of being merely an empty word, i.e. a word without reference, to which nothing in the outside world corresponds (§3). Hence, if thinking corresponds to being, the term 'matter' will have to correspond to something that has being; therefore matter cannot be formless.

To my knowledge Plotinus was the first to use the phrase 'empty word' in relation to matter. What is more, he puts it into the mouth of the imaginary opponent that Sorabji spotted as one of the possible precursors of Philoponus' view of prime matter.[55] Although I do not share Sorabji's interpretation of that text (*Enn.* II.4 [12] 11.3-13 =

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[54] See Plot. *Enn.* II.4 [12] 11.14, 12.22, discussed below.

[55] Sorabji *MSM* 31, with my remarks on p. 39-41.

T49 below), it proves to be a passage of the utmost importance. Once again, we must emphasize Philoponus' debt to Plotinus' discussion of matter. We have already seen that this part of *Enneads* II.4 provided Simplicius with much of his ammunition against the Stoics, and Philoponus with a series of possible objections against his own view.[56] Now the 'empty word' directs our attention to this treatise again. On this last occasion Plotinus deserves a fuller treatment than he has received so far, which will enable us to confirm that much of his influence as noted in earlier chapters is really concentrated in a few chapters, even a few paragraphs, where he argues for the formlessness of prime matter.

The second part of *Enn.* II.4 [12], cc. 6-16, is devoted to the notion of sensible matter. First (c. 6) Plotinus questions some common intuitions about matter, in particular bulk (ὄγκος) and magnitude (μέγεθος); after brief discussion the theories of Empedocles, Anaxagoras, Anaximander and the Atomists are judged inadequate (c. 7). Then (c. 8) Plotinus starts developing the notion of a kind of matter which is devoid of all sensible qualities that characterize the elements,[57] devoid of shape, and hence devoid of magnitude (μέγεθος).[58] Matter has none of these things, but receives all of them from the giver of forms, whose manipulations it can only completely obey if it does not have a recalcitrant size and shape of its own.[59] Thus all determination, including quantity, originates from form (εἶδος), for there is no reason why quantity would not depend on a λόγος if quality does.[60] In the subsequent chapters (cc. 9-10) Plotinus argues in more detail how something without size (ἀμέγεθες), indeed without any determination at all (ἀοριστία), is to be envisaged.[61] Plato's 'bastard reasoning' serves to confirm the conceptual difficulties involved.[62] This much is clear al-

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[56] See Chapter 2 p. 100ff.

[57] *Enn.* II.4 [12] 8.1-11.

[58] *Enn.* II.4 [12] 8.11-13.

[59] *Enn.* II.4 [12] 8.14-23. Needless to say, the influence of Plato's *Timaeus* is palpable.

[60] *Enn.* II.4 [12] 8.23-30. Note that Alex. *Quæst.* II.13 58.30-34 alludes to the claim that the elements derive their heaviness from the triangles (regarded as their matter), which is difficult to reconcile with the notion of mathematical body. Unfortunately the text is too corrupt to draw any conclusions; cf. Sharples (1992) 114 n. 373 *ad loc.*

[61] Cf. Narbonne (1993) 224-234, (1994) 113-147 Appendice: 'Irréalité de la matière et réalité du mal'.

[62] *Enn.* II.4 [12] 10.11.

ready: Philoponus' vocabulary in *Contra Proclum* XI.7 shows remarkable similarities with Plotinus; and we need not be surprised, for Plotinus is arguing in favour of the complete formlessness Philoponus is refuting.

At the beginning of II.4 [12] 10 Plotinus introduces an interested member of his audience asking 'What, then, shall I conceive this sizelessness in matter to be?' Let us call him Mr Q. After the mind-boggling exposition of Plotinus in c. 10 Mr Q returns and asks—rather desperately this time: 'Why is anything else needed for the composition of bodies besides magnitude (μέγεθος) and all qualities?' Plotinus answers that something is needed to receive them all. This eminently Platonic answer provokes a lengthy response from Mr Q assembling all common sense associations with matter into a rival view:

T49 This, then [*sc.* that which is needed to receive all forms], is the volume (ὄγκος). But if volume, then presumably magnitude (μέγεθος). But if it is without magnitude (ἀμέγεθες), it will not even have anywhere to receive them. And if it were without magnitude, what would it contribute, if it contributes neither to form and quality, nor to dimension (διάστασις) and magnitude, which, wherever it occurs, is thought to come to bodies from their matter. And in general, just as acting and making and times and movements are things that exist (ἔστιν ἐν τοῖς οὖσιν) without having a foundation of matter in them, so there is no need either for primary bodies to have matter. They can each be what they are as wholes, and be more complex when their structure is produced by the mixture of a larger number of forms. So this "without magnitude" of matter is just an empty word. (Plot. *Enn.* II.4 [12] 11.3-13, transl. after Sorabji *MSM* 31)

Mr Q does not have much patience with Plotinus' view: he concludes that this emptied notion of matter can be dispensed with, since it does not contribute anything at all: its lack of magnitude (ἀμέγεθες) is an empty word. Rather, bodies should be conceived without matter, as a variegated mixture of a number of forms. In my view, Mr. Q is here referring to a form of bundle theory[63] rather than kicking out prime matter in order to regard magnitude, the next layer up, as the substrate receiving the various qualities.[64]

I suggest we suppose for a moment that Philoponus assumed the role of this common sense member of Plotinus' audience. He would not feel inclined to follow Mr. Q and embrace bundle theory; we have seen

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[63] See Sorabji *MSM* Ch. 4.

[64] *Pace* Sorabji *MSM* 31.

he is too much devoted to Aristotle's metaphysics of matter and form to do so. But, like Mr. Q, Philoponus shares the common sense intuition that matter should contribute something to physical bodies, e.g. extension. What is more, he demands that it plays a role in explaining the fixed ratios observed in the change of the elements and he also employs it to account for divisibility.[65] But according to Plotinus matter would need a determinable character of its own, a form or formative principle in order to be able to contribute all this instead of merely being on the receiving end. So Philoponus posits such a character: indefinite three-dimensional extension with determinate size as its first differentia. Incidentally, Philoponus was not the only philosopher who was congenial to the position of Mr Q. We have seen that Simplicius, too, while apparently accepting Plotinus' Platonic reasoning, succumbed to the common sense intuition that matter should contribute volume (ὄγκος), extension (διάστασις), as well as divisibility (μερισμός).[66] In this way both philosophers show they were not convinced by Plotinus.

Of course Plotinus has a reply, and it is one which proved to be seminal. He explains (c. 11.17-27) that matter receives everything in extension only because it receives extension as well. Matter receives extension at the same time as it receives qualities etc., just as animals and plants change in size and quality at the same time. The determinate size at work in those cases, however, should not be transferred to prime matter. We have discussed this passage in Chapter 3 as a possible source of inspiration of Philoponus' discussion on growth.[67]

Plotinus continues to point out (c. 11.27-32) that the image of volume and indefiniteness that the mind perceives when contemplating matter arises because matter's first capacity, so to speak, is to receive volume. Because volume is void, this imaginary volume led some to believe that matter is void. Here Plotinus seems to recall Aristotle's account of Plato in *Phys.* IV.2. We have seen in Chapter 2 that Simplicius used this passage in Aristotle to support his own concept of matter as indeterminate extension, which he expressed in vocabulary reminiscent of Plotinus. Indeed, the passage may have inspired both Philoponus and Simplicius in reconsidering the association of matter

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[65] For the change of the elements, see Chapter 3; for divisibility, see Chapter 2 p. 117-120.

[66] Simpl. *in Phys.* 230.29-33; see above, p. 116, 131.

[67] See T27, p. 163.

with extension. Further on (c. 11.34-43) Plotinus admits that among things lacking magnitude, matter is the only one liable to be conceived as volume, and thus in a sense even Plotinus confirms this association.

Next, Plotinus refers to the Platonic 'large-and-small' which he believes is a proper description of matter, because the concept of matter lacks determination as to size (c. 11.33-34). We have seen in Chapter 2 that both Philoponus and Simplicius agree that prime matter lacks determination as to size, and Philoponus carefully points out that neither large nor small is essentially related to three-dimensional extension. Besides, Plotinus adds (c. 11.34-36), matter, as the matter of volume and the receptacle of magnitude, is contracted and expanded as it runs through the whole range of volume. We have pointed out that Philoponus may have found here some inspiration for his explanation of growth and diminution in terms of the contraction and expansion of matter, described in Chapter 3.

In the subsequent chapter Plotinus concludes from all this that matter does indeed greatly contribute to bodies (c. 12.1-2): they need some unique thing, which is given magnitude (without being identical with it), in order for them to exist in. This thing is not place, for place is posterior to matter and bodies, but matter (c. 12.10-13). Then Plotinus in so many words opposes Mr Q's conclusion:[68]

T50 So, then, matter is necessary both to quality and magnitude, and therefore to bodies; and it is not an empty word but it is something underlying, even if it is invisible and without magnitude. So if we do deny the existence of matter we shall by the same argument be prevented from asserting the existence of qualities and size; for everything of this kind can be said to be nothing when taken alone by itself. (Plot. *Enn.* II.4 [12] 12.20-27; transl. after Armstrong [1966])

This confirms that Plotinus attaches importance to denying his opponent's charge. For Plotinus, however, the necessity of a Timaean receptacle is sufficient to back up the notion of matter in spite of its lack of magnitude and volume.[69] This, as we have seen, is denied by Phi-

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[68] Cf. Narbonne (1993) 228-231. Narbonne *o.c.* 229, 231 and (1994) 116 does not find Plotinus' arguments convincing and for this reason, so it seems, he concludes that Plotinus succumbed to his opponent in the end. This is a conclusion I find hard to accept for lack of evidencein Plotinus' texts.

[69] It might be argued that Philoponus did give Aristotelian sense to the notion of matter as such in *in GC* 63.14-17 (T24), when he distinguished the nature of matter ('whatever that may be') from proximate matter. In *Contra Proclum* XI.7 however such a general notion of matter is not considered sufficient to back up its existence: a proper natural formative principle is indispensable.

loponus (as well as Simplicius): if matter is not to be an empty word after all, it must have formal determination, and in Philoponus Aristotle's notion of proximate matter serves to render the concept of informed matter a plausible one.

What is more, in a sense Plotinus already phrased the objection from which *Contra Proclum* XI.7 set out. For he asks:

T51 If the substrate is to be some quality, a common one which exists in each and every one of the elements, first of all it must be stated what this quality is. Next, how can a quality be a substrate? How is a quality in something without size to be conceived, when it does not have matter or size?[70] Then, if the quality is definite, how is it matter? But if it is something indefinite, it is not a quality but the substrate and the matter we were looking for. (Plot. *Enn.* II.4 [12] 13.1-7; transl. Armstrong [1966])

With the advantage of hindsight it is almost irresistible to regard this Plotinian passage as the program that Philoponus carried out. If we are allowed to make a suggestive reconstruction of Philoponus' response to this passage, it would look like this: What is the quality common to all elements? Three-dimensional extension.[71] How can a quality (or a form) be a substrate? Just like every proximate matter. Even when it has no matter or magnitude? Yes, because it is itself matter it does not need a further matter; it is without definite size and only in that sense without magnitude and indefinite. But if it is something indefinite, it is not a quality but the substrate and the matter we were looking for! Indeed it is the matter we are looking for.

I trust that even without this speculative reconstruction it is quite likely that both Philoponus' and Simplicius' accounts of matter as indefinite three-dimensional extension owe much to the discussion between Plotinus and the critical member of his audience described in

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[70] Here Plotinus keeps to his own account: a quality (i.e. characteristic) common to all elements is believed to be prior to matter and magnitude.

[71] One qualification of our interpretation should be underlined: when Plotinus says 'quality' here, he is thinking of a perceptible quality, and his questions show that he does not know which one would be available, since the usual perceptible qualities by which the elements are differentiated are of course to be ruled out. In my (perhaps not too suggestive) rephrasing of Plotinus' questions I take 'quality' in the wider sense (also attested in Plotinus) of 'any formal determination'. We have seen that this is what Philoponus believes his three-dimensional extension to be, although he would classify it in the Aristotelian category of quantity when taken in itself.

Enn. II.4. I take Philoponus' allusion to the 'empty word' as a clear indication of this source of inspiration.

IV MATTER AS PURE POTENTIALITY

The notion of formlessness is closely connected with the idea that prime matter is pure potentiality, since form is the actuality corresponding to matter's potentiality. Aristotle had made these identifications in e.g. *DA* II.1 412 a 9,[72] and they found their way into Middle Platonism[73] and Neoplatonism. An important representative of this tradition is, of course, Plotinus. He discussed the relation between potentiality and matter elaborately in *Enn.* II.5 [25].[74] Plotinus shows that matter, being pure potentiality, δύναμις (and not merely in potentiality, δυνάμει), does not belong to the things that are:[75] it is a μὴ ὄν. Of course Philoponus cannot endorse this conclusion, because if matter does not belong to the things that are, it is an empty word, which he believed to be unacceptable. Consequently, if he is to defend his claim that matter does belong to the things that are, he will also have to argue against matter being pure potentiality. Indeed, in *Contra Proclum* XI.8 443.14-444.21 Philoponus points out that the thought is contradictory. Let us first examine the relevant passage from Plotinus:

T52 1. But as for matter, which is said to exist and which we say is all realities potentially, how is it possible to say that it is actually something belonging to the things that *are* (τι τῶν ὄντων εἶναι)? For if it was, it would already have ceased to be potentially all realities. If, then, it does not belong to the things that are, it necessarily cannot be a being (μηδ' ὂν αὐτὴν εἶναι). How could it, then, be actually something when it is not something that is?

2. But, even if it is not any of the realities which come into being upon it, there is no obstacle to its being something else, since it is not all realities which have a material foundation. In so far, then, as it is none of these things which are founded upon it, and these are things that are, it is non-being (μὴ ὄν).

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[72] Ἔστι δ' ἡ μὲν ὕλη δύναμις, τὸ δὲ εἶδος ἐντελέχεια. Incidentally, Themistius (*in DA* 39.7), Philoponus (*in DA* 211.1), and Simplicius (*in DA* 84.2, though not in the lemma, 84.1) all read δυνάμει instead of δύναμις.

[73] See e.g. Alcin. *Didask.* 163.7-10.

[74] See esp. *Enn.* II.5 [25] 5.34-36. Earlier discussions of this topic are to be found in Nemes. *De nat.hom.* 2.345-353, and Sext. *PH* II 226.

[75] Note the same expression in *Contra Proclum* XI.7 427.10-20.

> 3. But certainly it could not be form, since it is imagined as something formless; so it could not be numbered among those form-realities of the intelligible world. So it will be non-being in this way too. If, then, it is non-being in both these ways, it will be still more non-being. (Plot. *Enn.* II.5 [25] 4.3-14; transl. after Armstrong [1966])

This passage clearly envisages matter as something which *is not*, neither sensible nor intelligible; nevertheless, at the same time it introduces the relativity of this non-being, in a way similar to Philoponus (XI.7 426.24-427.9). We also see that Plotinus (here at least) takes for granted that matter 'is imagined as something formless', something for which Philoponus criticized his opponents (XI.7 426.4-24). It should be noted, however, that for Plotinus 'being a form' means to exist in the intelligible realm, a dimension not envisaged by Philoponus. Further below (II.5 [25] 5.3-5) Plotinus is content to point out that matter belongs to the things that are in the minimal sense of announcing only what it is going to be, as if it adjourns its being to that which it is going to be.[76] It is not hard to see why Philoponus believed matter becomes an empty word in this way.

Philoponus deals with the potentiality of matter in a series of polemical arguments *ad absurdum* (XI.8) subsequent to the formal refutation of the traditional notion of matter (XI.3-7).[77] We have already encountered two related arguments: first, the pure potentiality of matter cannot explain the expansion and contraction involved in elemental changes.[78] Moreover, Philoponus argues that only the statement that matter is always actually corporeal makes sense.[79] In Chapter 2 it has been noted already that Philoponus does not use the condition that matter must explain division for ruling out the possibility that matter is always merely potentially corporeal, but that he provides a different series of arguments to refute that claim. Since the arguments touch on the notion of potentiality as such, they are discussed here. Immediately following the passage we discussed there (XI.8 436.16-443.6), Philoponus claims (443.6-12) that the matter of bodies cannot be incorporeal since their form is too. How could the combination of two indi-

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[76] Cf. Baeumker (1890) 409, who notes that Plotinus is not at all concerned with demands of physical science, but only 'ringt (...) mit dem Probleme, die Stellung des Endlichen zum Unendlichen und den Hervorgang des Sinnfälligen aus dem Intelligiblen zu bestimmen.'

[77] For a modern parallel see Byrne (1995) esp. 213.

[78] *Contra Proclum* XI.8 429.2-431.2; see Chapter 3 p. 136.

[79] *Contra Proclum* XI.8 436.16-443.6; see Chapter 2 p. 119-120.

visible constituents yield magnitude and body? The familiar example of the myriad of points which will never succeed in building a solid is adduced to support this point.[80] Anticipating, apparently, that his opponent will point out that matter (although actually incorporeal) is potentially corporeal[81] and therefore capable of accounting for the emergence of body, Philoponus writes:

T53 If they say that matter is potentially body, even though it is incorporeal, then, if it is *always* potentially body, it follows that it will never be body in actuality but *always* incorporeal in actuality. For a thing which is *x* potentially cannot be *x* in actuality as long as it is [*x*] potentially. For instance, as long as water is only potentially hot, it is not hot in actuality. Therefore, if matter is always potentially body, it will always be incorporeal in actuality; so the aporia remains: How can two incorporeal things combined constitute magnitude and body?

Again, if [matter] is always potentially body, and never becomes body in actuality, it will have its potentiality in vain since it never advances to actuality. But no eternal thing is merely in potentiality indefinitely (τὸν ἄπειρον χρόνον), as also Aristotle believes. In the case of things that come into being and perish it is possible that [a thing] is something potentially and does not advance to actuality, because its corruption occurs prior to the completion and actuality of its potentiality. For instance, although each human being is capable of acquiring all knowledge he does not acquire it at all because his death occurs prior to the actuality; also, although wood is potentially a chair or a ship it does not at all become [a chair or a ship] in actuality. However, Aristotle says that as far as eternal things are concerned it is impossible that [they] are merely potentially something indefinitely, for they will have their potentiality in vain if it never advances to actuality. So it is not possible that matter is potentially body indefinitely. (Philop. *Contra Proclum* XI.8 443.14-444.10)

Philoponus cleverly combines the alleged eternity of matter with its potentiality: if matter is *always* potentially body, it will never be an actual body. Hence it does not help to have recourse to the concept of

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[80] Alexander *DA* 6.6-11 explains that the problem how incorporeal matter and form can yield body arises from the failure to realize that everything which comes to be, comes to be out of something which is not that which it is coming to be. According to that rule, body would come to be out of things incorporeal. However, the question is entirely hypothetical because in fact body as such (ἁπλῶς σῶμα) never comes to be—given that the universe is eternal.

[81] Simpl. *in Phys.* 230.21-27 (T19) distinguishes two senses of 'incorporeal': non-corporeal as the opposite of corporeal, and non-corporeal as transcending that opposition, see Chapter 2 p. 111 n. 209. Cf. Van Winden (1959) 171 who takes this to be a familiar Peripatetic point, handed down to both Calcidius and Simplicius, perhaps even along Platonic lines.

potentiality in order to evade his previous objection. We might add, more generally, that if prime matter is always potentially everything, nothing will ever exist actually—which is a counterfactual.

Even worse, Aristotle himself pointed out that potentiality does not apply to eternal things.[82] An eternal potentiality is simply not a potentiality at all, for potentiality implies a genuine possibility of realization. In things that come into being and perish a non-realized potentiality is acceptable,[83] for it is in a way overtaken by the subject's corruption. However, in eternal things potentiality is simply non-existent. Since Philoponus' opponents consider matter to be eternal as well as pure potentiality, they are in disagreement with Aristotle.

This argument, tempting though it may be, is a little too easy. First of all, as Plotinus points out (II.5 [12] 1-2), potentiality has several senses: the bronze is potentially a statue in the sense that it remains when it becomes something else; air is potentially fire in the sense that it gives itself up in the process. In the case of knowledge, the man acquiring it does not change his identity, so he was only accidentally in potentiality. Again, there is active potentiality, the capacity to bring about some effect. None of these senses of potentiality apply to matter. According to Plotinus, who lists them all,[84] matter is potentially in the sense of underlying affections, shapes, and forms, and being naturally disposed to receive them.[85] Everything else is itself something in actuality and only potential in relation to another actuality, but prime matter is not: it is nothing but the announcement of being without itself being something in actuality (II.5 [25] 5.3-4).

Apart from phrasing the exact opposite of Philoponus' view of matter, Plotinus modified the notion of potentiality to a considerable extent. For this reason Philoponus' objection would not succeed against Plotinus: potentiality reduced to absolute receptivity can quite easily be believed to remain intact while being actualized at the same

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[82] See e.g. *Metaph.* 1050 b 6-18 (cf. Rabe), 1071 b 17-26; esp. *Cael.* I 12, where this reasoning is applied in support of the ungenerability and indestructibility of the universe. Cf. esp. Sorabji *Necessity* Ch. 8, with more relevant passages at p. 132 n. 9.

[83] Sorabji *l.c.* provides a similar interpretation of Aristotle in that he stresses that Aristotle confined the so-called 'principle of plenitude' to eternal things.

[84] They are of course derived from Aristotle's discussion of potentiality in *Metaph.* IV.12 and IX.1-5.

[85] This notion of potentiality was modelled after the character of Plato's receptacle.

time. For according to proper Timaean doctrine matter remains perfectly prepared to receive one set of forms while harbouring another.

Philoponus, however, envisages a less sophisticated opponent who also sets higher value on proper Aristotelianism. Judging from his arguments he anticipates a different reply: 'Of course matter's potentiality is realized, since matter never exists on its own, without forms, even though its own nature (constituted by the potentiality in question) may be considered separately in theory.' Philoponus is not much troubled by this reply: if matter becomes actually body at some time and perhaps incorporeal again at another, matter is not changeless at all. In that case his opponent's kind of matter would require yet another matter etc.: Aristotle's regress argument can be turned against him.

Alternatively, if matter is *always* actually body, body as such would never change, which is precisely what Philoponus has been arguing. If body as such never changes, there is no reason to assume an incorporeal substrate. Hence, Philoponus concludes, matter can neither be potentially body, nor potentially or actually incorporeal. The only remaining option is that matter is corporeal.[86]

It should be noted, however, that the notion of body used here, is importantly different from the one Philoponus employed in defining his own candidate of matter, three-dimensional extension. The objection that two incorporeals cannot yield body, and the example of points which do not add up to a solid, is based on the notion of body as a kind of stuff with resistance. Philoponus, on the other hand, made sure we understand his 'body as such' to be defined only by three-dimensionality. If so, Philoponus is playing loose with the two senses of 'body' simply in order to be able to launch yet another argument without taking the trouble to be consistent with his own beliefs. The rules of polemics differ from the rules of philosophical discourse.

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[86] Cf. *Contra Proclum* XI.8 (440.19-443.6), where Philoponus is answering the objection (440.19-20) that matter is only divisible after it has received quantity and corporeality; for an analysis, see Chapter 2 p. 119-120. He claims that either it is implied that incorporeality changes into corporeality (and, consequently, vice versa) which means matter can come into being and perish after all, and will therefore need another substrate, *ad infinitum*. Or, if matter remains incorporeal after receiving the form of body, the explanation of divisibility is still lacking. Since there is no middle between corporeality and incorporeality, matter is always actually corporeal if it was never actually incorporeal. If matter is eternally corporeal, body as such does not change and it is impossible to prove that an incorporeal substrate underlies it—which is what Philoponus had argued in the preceding chapters of book XI. For the role of divisibility in Philoponus' argument, see above, Chapter 2 p. 116-118.

Finally, confirming the connection we made between the potentiality and the formlessness of matter, Philoponus proceeds to repeat his conclusion of *Contra Proclum* XI.7:[87] if matter is corporeal, it follows that matter cannot be formless; something that has being must have a form, a nature, and a corresponding definition. Matter can neither be incorporeal nor formless. Even if a myriad of Platos and a list of other ancient philosophers support it: the hypothesis assuming an incorporeal and formless matter is a false story[88] and an unproved postulate.

[87] *Contra Proclum* XI.8 444.24-445.11.

[88] A μῦθος ψευδής, no doubt a significant variation on Plato's *Timaeus*, cf. 29 d 2 εἰκὼς μῦθος.

CHAPTER SIX

THE SIGNIFICANCE OF THREE-DIMENSIONAL PRIME MATTER

The aim of the present study has been to elucidate the argument of Philoponus' treatise on prime matter, and to provide better insight into the doctrinal background from which Philoponus' thought developed. It has emerged that his definition of prime matter as the three-dimensional extension of bodies, which is paralleled by his Neoplatonist contemporary Simplicius, has deep roots in Neoplatonism and the Neoplatonic interpretation of Aristotle.

In this final chapter I shall bring together several aspects of Philoponus' view of matter which have been discussed in the previous chapters, but now under different headings. Our focus will no longer be on the details of the individual arguments, but we shall try to reach an assessment of the theory as a whole. How does Philoponus put his new idea to work, both in the *Contra Proclum* and beyond? What significance does he attach to it in relation to the general argument against the eternity of the world? How much credit does he deserve for his innovation and how much of his theory had been prepared by his predecessors? How does he conceive of his relation to these predecessors? And, finally, what gave him his unique position among late Neoplatonists?

I THREE-DIMENSIONAL EXTENSION AND THE ETERNITY OF THE WORLD

We have seen that Proclus' eleventh argument was a cornerstone of his entire polemics against the doctrine of creation.[1] Consequently, the refutation of this argument by Philoponus renders Proclus' work entirely unconvincing. However, the relation between the excursus of matter (which has been the subject of this study) and the discussion of the eternity of the world is not as straightforward as might be expected. Although Philoponus stresses that the new approach he has

[1] See Chapter 1, p. 17ff.

introduced undermines Proclus' argument in a fundamental way,[2] at the same time he acknowledges the possibility that the argument can be refuted on its own terms, which he shows in XI.9-12.

The crucial move of Proclus' argument is Aristotle's *reductio ad infinitum* of the suggestion that matter is generated: the generation of matter requires another matter, which if it is generated requires an alterior matter, etc. In his summary of Proclus' argument (XI.9) Philoponus points out that this reduction relies on the doctrine that nothing can come into being out of nothing.[3] He confines his criticism to Aristotle's argument: does matter really need another matter in order to be generated? If not, the claim that the cosmos is eternal because matter is, is invalid.[4]

In *Contra Proclum* IX Philoponus had already defused the significance of the analogy of house-building as employed by Proclus.[5] There he first argues for the widely accepted tenet that immanent forms come into being out of absolute non-being.[6] Then he attacks Proclus' assumption that matter does not come into being instantaneously (i.e. without a process of generation), but is made suitable for the reception of forms during the building process. In IX.14 he argues that only the *perfection* of the form comes to be at an instant. Proclus' words are not clear for he claims that the form supervenes 'to the extent to which' (καθ' ὅσον ... κατὰ τοσοῦτον) the builders make progress in constituting matter in time. Two interpretations are possible: either the form is generated along with matter in time, or matter is generated along with the form instantaneously (IX.14 369.21-370.10). Moreover a house-builder would not be a house-builder if he did not actually create the form of the house, but only prepared its matter. In that case he should be called matter-maker (ὑλοποιός) instead of form-maker (εἰδοποιός, 370.10-23). Ordinary and philosophical parlance would be abolished: even Plato (*Tim.* 41 c 4-5) and Aristotle (*Metaph.* VII.7 1032 a 25) speak of generating living beings, not matter. All descriptions we use are aimed at the form by which things are distinguished, rather than at their matter. Proclus' claim is absurd: it is clear that e.g. in an embryo *the form* gradually develops to perfection (IX.14 370.24-

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[2] *Contra Proclum* XI.8 445.18-27.
[3] *Contra Proclum* XI.9 446.18.
[4] *Contra Proclum* 446.21-447.7.
[5] For Proclus see Chapter 1 p. 9ff.
[6] *Contra Proclum* IX.14 369.1-21.

371.16). In IX.15 371.17-373.17 Philoponus continues his argument. This time he follows the spirit of Proclus' analogy, but only to pursue its consequences to absurdity again. For if Proclus denies that form is generated because it comes to be instantaneously, and if, consequently, matter comes to be instantaneously as well, Proclus abolishes not only the generation of matter, but indeed all generation (which is supposed to be a process in time).

Philoponus concludes that the house-building analogy is misguided, and he proceeds to offer a new interpretation,[7] which is repeated in XI.10. There it constitutes Philoponus' response to the analogy of house-building as it features in Proclus' eleventh argument. The new interpretation turns on the relativity of form and matter. Matter does not need other matter as its substrate, because (a) neither the form nor the composite need something like themselves (i.e. a form or a composite respectively) for them to come into being (XI.10 448.16-449.12); (b) it is evident that things come into being from a material cause *unlike* themselves (XI.10 449.12-450.8). From (b) it follows that prime matter does not need a substrate for its existence (or it would in fact be form) but rather that it needs form. Indeed, as Proclus says, as a relational entity matter cannot exist without its complement, the form (XI.10 450.8-452.4). Furthermore, if particular matter comes into being,[8] it would need matter, and *that* matter would need an anterior matter, *ad infinitum*, which is absurd. If, therefore, particular matter does *not* need matter to come into being (but rather form), and if there is indeed a correspondence between particular matter and universal matter as Proclus claims,[9] universal matter does *not* need matter either (XI.10 452.4-453.7).[10] In this way the infinite regress cannot even get started. Philoponus continues with the difference between

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[7] Philop. *Contra Proclum* IX.16 373.18-377.6; cf. IX.14 370.10-371.16; XI.10 452.18-25; XII.6 475.3-476.5.

[8] This is a deliberate distortion: Philoponus cites 404.7-14 again, but there Proclus does not say that ὕλη γίνεται but merely that the artisans make suitable *what is not yet matter*, and that in doing so *they progress towards making matter*, which will come into being instantaneously in the end. See Chapter 1 p. 3, 12-13.

[9] See Chapter 1 p. 3, §§4-5.

[10] In *Contra Proclum* XI.11 Philoponus adds two further arguments: (i) forms as such need a substrate for their existence, but matter does not, so why bother with a substrate for matter? (ii) form and matter are not only relata but even contraries according to *Top.* VI.9 147 a 29ff. (cf. *Contra Proclum* VI.26 210.4-11), and they should therefore have contrary ways of generation. From this perspective matter will definitely *not* need matter to come into being.

regarding smoothed stones as a whole and as composites, which we discussed earlier.[11] Now that Aristotle's proof of the eternity of matter has been removed by this remarkably Aristotelian reasoning, Proclus' eleventh argument no longer succeeds.[12]

Finally (XI.12), Philoponus can rehearse his own arguments again, and he concludes that there is no way to prove that matter is unchangeable and has not come into being. He reverses Proclus' argument that the cosmos is eternal because matter is, and argues that if the cosmos has come into being, matter must have come into being as well—which has now been proved to be a genuine possibility.[13]

It is important to note that the remaining argument in book XI would also have succeeded if the traditional notion of matter had been allowed to stand. *Creatio ex nihilo* had already been defended in book IX with reference to the example of immanent forms, in which case even Proclus accepts it. Besides, if the creative activity of the Demiurge is supposed to transcend human art which needs matter, it is necessary that he did *not* need matter for his creation of the universe as a whole.[14] If the creation of matter has become a definite possibility (if not also a theological imperative) there is no reason why *creatio ex nihilo* could not apply to prime matter.

Moreover, Philoponus endorses the concept of *concreatio* (already used by Proclus) on the basis of the Aristotelian relativity of form and matter, and we have just seen that he also uses it to overthrow Aristotle's infinite regress argument. The importance of *concreatio* explains the complementary nature of books IX (about the generation of immanent forms) and XI (about the generation of matter), which can be illustrated among other things from the fact that Proclus' building analogy of *Contra Proclum* XI is most elaborately attacked in book IX.[15] Insofar as the creation of the world is concerned, the combination

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[11] *Contra Proclum* XI.10 453.9-455.25; see Chapter 5 p. 257-258 (T45).

[12] In XI.11 Philoponus mentions a possible objection to the effect that we do not *see* anything coming to be without matter. Philoponus quickly removes this objection by referring to his argument in book IX that things come to be with respect to their form, not with respect to their matter. Besides, the generation of parts (physical changes) need not be congruent with the generation of the whole (the universe).

[13] In the final chapter of book XI Philoponus refers to Plato's *Timaeus* again in support of this very point, XI.15 464.20-465.21.

[14] Cf. *Contra Proclum* IX.9-10.

[15] *Contra Proclum* IX.14 369.21-371.16, with reference to *Aet.* XI 404.8-10. There are numerous cross-references between books IX and XI: see IX.11 345.16-

of *creatio ex nihilo* and *concreatio* is sufficient for Philoponus to prove his point. The new concept of prime matter is not necessary for this purpose.[16]

In itself, the result of this analysis merely confirms what Philoponus had already pointed out at the beginning of book XI. The significance Proclus attaches to the traditional concept of matter in order to argue for the eternity of the world provides the occasion for an inquiry into prime matter *before* the examination of the argument at hand.[17] However, in view of the question what motivated Philoponus to develop his doctrine of three-dimensional prime matter, we may infer that the formal defence of creation as such did not require it. Apparently, Philoponus was sufficiently interested in the problem itself to seize the occasion and show how several problems in physics and metaphysics could be solved by a new definition of prime matter. This does not mean that the excursus on matter does not after all contribute to a 'metaphysics of creation'. Philoponus' programme is designed to reach as accurate an account of creation as possible. Of course a correct understanding of creation implies *both* a correct understanding of the contingency of matter *and* a correct understanding of its nature.

346.16; IX.13 368.10-16; XI.1 407.21-23 (referring to the promises in book IX), XI.10 447.22-448.16, 454.12-25, 456.3-14, 458.8-15. Rabe suggests that XI.14 463.7-10 ὡς πρότερον δέδεικται might refer to IX.11 356.12-24 although the change of the elements into each other was also discussed elsewhere, esp. in *in GC passim*. XI.13 459.16-7 'Plato, after all a human being, made mistakes as we showed in the preceding *logos* (ὡς ἐν τῷ πρὸ τούτου ὑπεμνήσαμεν λόγῳ)' is puzzling. Book X does not seem to contain an appropriate passage (Rabe hesitatingly suggests X.7 400.7-10 but this concerns Proclus' view of Plato) whereas IX.1 318.5-7 is a perfect parallel, and is found at the start of a series of chapters about Plato's mistakes, IX.1-3. Is it possible that book IX and XI at one time followed each other directly, constituting a comprehensive attack on the principle of *ex nihilo nihil* as applied to physical composites? Compare Philoponus' statement on the connection between these books in *Contra Aristotelem* fr. 115 W. (ap. Simpl. *in Phys.* 1141.7-11).

[16] This is clearly brought out by Philoponus in *Contra Proclum* XI.1 409.12-13: ἅμα γὰρ ὑπὸ θεοῦ εἰδοπεποιημένη ὕλη παράγεται, ἥτις ποτ' ἂν εἴη.

[17] *Contra Proclum* XI.1 407.18-21: (...) εὔλογον ἡγοῦμαι πρὸ τῆς τοῦ προκειμένου ἐπιχειρήματος ἐξετάσεως μικρόν τι παρεκβάντας διασκοπῆσαι, τίς ποτέ ἐστιν ἡ κοινῶς ἅπασι τοῖς φυσικοῖς ὑποκειμένη ὕλη (...).

II THREE-DIMENSIONAL EXTENSION IN PHYSICS

In Chapter 3 we have seen how Philoponus came to understand that a satisfactory solution to the problems of growth and diminution could only be achieved if it is acknowledged that matter as such has the characteristic of three-dimensional extension as part of its own nature. It is clear that Philoponus was not satisfied with his earlier attempts in *in GC* to account for the change of volume observed in elemental change. There he tried to cope with it in a traditional way, i.e. by having recourse to the receptive capacity of prime matter. Later, he came to believe that the phenomena could be explained only if matter as such possesses extension with a certain latitude of size. This dissatisfaction with the contemporary physics that is exemplified for us in his interpretation of Aristotle's *De generatione et corruptione*, is an important motivation for developing a new view of matter.

In Chapter 2 we noticed that Philoponus agrees with Simplicius that matter must be responsible for the differences between enmattered forms and their intelligible causes, viz. extension, divisibility, and individuation. To provide these characteristics is a function matter has to perform in the constitution of physical bodies. We may surmise that neither of the two philosophers was persuaded by Plotinus' highly sophisticated account of prime matter and by his claim that extension and magnitude, too, belong to bodies in virtue of forms. Again, dissatisfaction with the current opinion on the role that matter can play in explaining physical phenomena proves to be a motivation for developing a different view of matter. On this occasion, we have Simplicius to prove that this dissatisfaction was not confined to Philoponus. In Chapters 2 and 5 we have tried to defend as plausible the view that this different account of matter was developed in close interaction with Plotinus' treatises on the topic. If I am correct, the philosophical digestion of Plotinian thought thus proves to have been an important stimulus for developments in sixth century physics and metaphysics.

We might add that the new definition of matter also found application in Philoponus' rejection of aether in his *Contra Aristotelem*.[18] Appealing to the Platonic view that the celestial bodies are made of a pure variety of fire,[19] and perhaps drawing on Xenarchus' criticism of

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[18] For the details of Philoponus' argument see Wildberg (1988).

[19] *Contra Aristotelem* frr. 9, 52-61 with Wildberg *o.c.* 130-134, 166-185. For the development of Philoponus' views of this issue and of the related issue of the origin

Aristotle,[20] Philoponus argues that Aristotle's arguments in support of the existence of aether are flawed. On the contrary, celestial and sublunary bodies share many sensible properties, as well as a common matter—three-dimensional extension.[21] For if prime matter is suited (ἐπιτήδειος) to receive all forms, why can it not also receive the forms of the celestial bodies? If it can, and if the celestial bodies have a form which entails the conceivability of its contrary, privation, then all ingredients are present for an Aristotelian account of change. Hence the celestial bodies must be generated and perishable.[22] In his report on Philoponus' *Contra Aristotelem*, Simplicius states that Philoponus referred to *Contra Proclum* XI for the idea that there is no such thing as incorporeal matter, and that the bodies are ultimately reduced to the three-dimensional. Hence, Simplicius confirms that Philoponus explicitly drew on his earlier work for the doctrine of prime matter.[23]

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of the movement of the heavenly bodies, see Évrard (1953), Verrycken (1990b) 267-271.

[20] *Contra Aristotelem* Prologue; see Wildberg *o.c.* Index nominum *s.v.* 'Xenarchus' for discussions of his influence.

[21] *Contra Aristotelem* fr. 59 (= Simpl. *in Cael.* 88.28-89.26, esp. 89.22-25), 71 (= *ibid.* 134.9-28) W.; Philop. ap. Simpl. *in Phys.* 1331.20-23. The issue was raised in Alex. *Quæst.* I.15, see Sharples (1992) 59-61 *ad loc.*; compare Alex. *in Metaph.* 22.2-3, 169.18-19, 375.37-376.2 and *Mixt.* 229.8 where Alexander accepts that the substratum of the heavens is body but not matter. Cf. Sorabji *MSM* 14-15, 42 n. 69. Aristotle of course claimed that the celestial bodies have a different matter which is only liable to locomotion, *Metaph.* VIII.4 1044 b 7-8.—As Richard Sorabji pointed out to me, Philoponus could have argued against aether (i) that the celestial bodies are composite, and (ii) that they have the same matter as the perishable elements, even without rejecting the traditional prime matter, and without regarding three-dimensional extension as non-composite (*pace* Sorabji *Philoponus* 24). So although Philoponus does use his new theory of prime matter, it is not necessary for this particular issue.

[22] Of course Simplicius finds this argument objectionable. He charges Philoponus with playing on 'the sharing of names' (*in Cael.* 134.18: ταῖς κοινότησι τῶν ὀνομάτων). Simplicius is probably referring to the two senses of 'body' as (i) three-dimensional extension and (ii) sensible body. Since both celestial and sublunary bodies are bodies in the second sense, Philoponus infers that they have body in the first sense as their common substrate. It should be noted, however, that the inference is correct insofar as sensible bodies are entitled to the name 'body' because they are (and can be considered as) solids. As we have seen, Philoponus' notion of prime matter is identical to 'body' in this restricted sense.

[23] See *Contra Aristotelem* fr. 72 W., Simpl. *in Cael.* 135.26-30. *Contra Aristotelem* fr. 116 W. (Simpl. *in Cael.* 1142.1-4) contains another reference to *Contra Proclum* XI, to the effect that in nature and art things come into existence out of non-being and perish into non-being. This argument, however, is found in *Contra Proclum* IX.11 (*sic*), and is not argued for in XI.

Philoponus also used the discovery that three-dimensionality is prime matter in his *Tmemata against Chalcedon*, a theological polemic against the doctrine—proclaimed by the Fourth Ecumenical Council of Chalcedon (451 AD)—that Christ is one person out of two distinct natures: one divine, the other human.[24] Philoponus, being a monophysite, argued that Christ is one nature, and that the Chalcedonian doctrine of two natures is incoherent. The notions of hypostasis (ὑπόστασις), essence (οὐσία), and nature (φύσις) are equivalent (p. 105-6 Chabot). If Chalcedon takes 'hypostasis' as referring to a numerical unity, then there has to be only one nature, for 'hypostasis' denotes the essence of the individual nature (p. 106-107 Chabot). When two natures enter a composite, they will constitute *one*, albeit composite, nature and *one* hypostasis. For instance, when the four simple substances combine, they constitute one composite substance. This suggests that a composite is not of a different genus (category) from its constituents, though it may be of a different species. The same rule is valid for the union between soul and body: they constitute one composite nature (p. 107-108 Chabot).

Subsequently, Philoponus likens this relation to the fundamental relation between three-dimensional matter and a particular form: both ingredients contribute something specific to the resulting unity of the composite body. Philoponus explicitly refers to his clear proof 'elsewhere' that the substrate of everything is not incorporeal prime matter but three-dimensional matter.[25] It is obvious that this illustration of the two natures of Christ is not convincing if matter is considered entirely formless.

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[24] A selection of Philoponus' arguments is preserved by Michael the Syrian (1166-1199), a Jacobite patriarch of Antioch, in his *Chronica*, vol. II, p. 92-121 (ed. Chabot). They show the same critical spirit at work, now against the orthodoxy of Chalcedon; cf. Grillmeier (1990) 114-120. Chadwick (1987) 49-50 suggests that Philoponus' point is that synthesis is of particular and specific entities, not of abstractions or universals. However, I am inclined to believe that the point is that each nature entering a composite has its own specific contribution to make (which is not obvious in the case of formless prime matter). In the case of Christ this entails that if He is one person in two natures (Chalcedon) the two natures have not fully combined as far as their being a nature is concerned. In that case Christ would not be the proper unity which He obviously is. Alternatively, the two different natures have truly become a unity, which can only be one, albeit composite, nature (Philoponus).

[25] See p. 108 Chabot. This passage corresponds to part of *Tmemata* book III, chapter VIII.

The thesis that unqualified body is prime matter is also taken for granted in *Opif.* VII.13 305.9-306.4. Replying to the question why God created the world in precisely *six* days Philoponus argues that the universe has six parts, both from a more mathematical[26] and from a more physical point of view. The mathematical approach (305.12-19) generates the number six from the number of dimensions. The universe comprises each type of magnitude, viz. solid, plane, and line; together they have 3 + 2 + 1 = 6 dimensions. The physical approach shows that the universe can be divided into six constituents: (i) unqualified body which is prime matter, (ii) soulless body, (iii) ensouled body, i.e. plants, (iv) zoophytes[27], (v) irrational animals, (vi) rational animals. With the traditional prime matter still in place below unqualified body this division would have yielded seven levels.

The choice of three-dimensionality out of all available characteristics was certainly not a mere coincidence or a flash of genius on Philoponus' (and Simplicius') part. In Chapter 2 we have surveyed aspects of the history of the concept of three-dimensionality in relation to matter and place from Plato and Aristotle to Proclus and Ammonius. Again, the convergence of several of these strands in Plotinus' treatise on matter may have been particularly stimulating for our commentators. Moreover, we have also been able to find a number of clear indications that three-dimensionality developed a status of its own under the influence of the Pythagorean revival, which was fostered in particular by Iamblichus and Syrianus. Judging from his commentary on the *Metaphysics,* Syrianus saw the need to incorporate in his view of the physical world the immanent mathematical principles which are the manifestations of corresponding intelligible causes (which are the proper objects of mathematical science). Hence a notion of 'body' arose which was defined by three-dimensional extension alone, and designated accordingly as 'the three-dimensional' or 'unqualified body'. It was employed in arguments opposing Aristotle's rejection of Pythagorean principles in the *Metaphysics,* as interpreted by Alexander. Following the lead of his master, Proclus incorporated unqualified body as a separate level in his system of the universe, just above prime matter, and accounted for it as a manifestation of Limit, Unlimited-

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[26] At *Opif.* 305.11 I suggest the reading μαθηματικώτερον instead of the manuscript's μαθητικώτερον (ed. Reichardt), in view of the contrast with φυσικώτερον. Cf. Philop. *Contra Proclum* XIII.13 514.24-26.

[27] See Chapter 4 p. 226, 228.

ness, Likeness, and Unlikeness. The Peripatetic phrase 'second substrate' was already available to distinguish it from the first substrate, absolute prime matter.

One of the effects of this development was that the proximate matter of the elements as indicated in Aristotle's *GC* II.1, which used to be regarded as Aristotle's prime matter, came to be identified with the level of unqualified body. From that moment on unqualified body was considered the substrate of the essential qualities of the elements. After this shift, which occurred long before Philoponus, absolute prime matter and the proximate matter of the elements were separated as two different entities on the ontological scale, and characteristics of the latter were no longer allowed to be transferred to the former. In other words, two notions of prime matter came to exist one next to the other.

Philoponus approached the question of prime matter from his list of physical phenomena which matter had to account for. Therefore he gave precedence to proximate matter, which, apart from its function as a material cause, has formal characteristics of its own, among others a specific size which constitutes a specific fitness to receive specific forms. Philoponus' continuous work on Aristotle may have helped shape his perspective. Only a prime matter designed after the model of proximate matter could fulfil the tasks Philoponus had in mind for it. The traditional incorporeal prime matter emerged as a useless and quite paradoxical theoretical construct which could easily be dispensed with from a physical point of view.

In his polemics against Proclus Philoponus strives to make that point with all the arguments from Plato and Aristotle he can find, and—it must be admitted—he often makes sense. We have seen that in his excursus on matter Philoponus anticipates several objections to his new definition of prime matter. He takes these objections from the traditional Neoplatonic criticism of Stoic materialism, which was conveniently summarized in Plotinus' treatises. Philoponus chose to name the Stoics as his precedent, because they, too, regarded the first substrate as corporeal—even though he had something quite different in mind, as we have seen.

As far as I know, Philoponus does not invoke the first chapter of Aristotle's *De caelo*, where 'body' (i.e. that which has the complete set of three dimensions) is designated as the subject matter of physics. Nevertheless, *De caelo* I.1 may serve as the alpha and omega of our

discussion with remarkable ease.[28] If matter and form are principles of physics, they should not be invoked to explain a change which transcends the limits of physics: the generation and corruption of body itself. Philoponus argues that no such generation and corruption needs to be envisaged in order to explain all physical phenomena—thus he remains within the confines of Aristotle's demarcation of the science. In this way a reconsideration of *Cael.* I.1 might even yield an argument against those who regard the paradoxical notion of prime matter to be an indispensable requisite of Aristotle's philosophy.

III PHILOPONUS AND THE ANCIENT PHILOSOPHICAL TRADITION

In the light of all this, one might wonder why the Neoplatonists continued to lay so much weight on absolute prime matter. After all, the emergence of unqualified body had left little physical necessity for it. Two considerations seem relevant here: first the all-pervading influence of the *Timaeus* can hardly be overestimated. Plato's account of the receptacle could not be swept under the carpet and even if Aristotelian thoughts had to be reconciled with it, its features were still kept alive and they were vehemently defended time and again. Pythagorean and Hermetic treatises were adduced (or forged) that described how the Creator produced the equivalent of Platonic matter, for instance by establishing an image of himself by emptying himself of all forms. These texts came to constitute reasons to hold on to Platonic matter. Indeed, if the outline I have given of the development of the notion of prime matter is correct, the two kinds of matter drifted apart again in the course of time, notwithstanding continuous attempts to harmonize Platonic and Aristotelian doctrine.

The second consideration is connected with Neoplatonist metaphysics. The Neoplatonic system as it had been formalized by Proclus and accepted by the later Neoplatonic commentators tends to regard prime matter as the only part of the universe which was caused by the One alone, without the co-operation with other, lower, causes.[29] It was

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[28] Incidentally, although Simplicius has preserved many Philoponean arguments against Aristotle's *De caelo* from the *Contra Aristotelem*, we have no indication that Philoponus disagreed with *Cael.* I.1; the remaining fragments start off with *Cael.* I.2. For Simplicius' use of *Cael.* I.1 see Chapter 2 p. 106.

[29] It has been noted (cf. Chapter 2, p. 80 n. 93) that Proclus sometimes regards matter as a manifestation of Unlimitedness, which resides just below the One.

considered a necessary consequence of the fullness of the Prime Cause to provide for what is both its opposite and in many respects its namesake: both the One and Matter are beyond being, indefinite, eternal, (though in contradictory ways),[30] both are conceived of by means of subtraction.[31] Hence the symmetry of the system required prime matter, and this symmetry was not easily given up. This, I suggest, may very well be the reason why Philoponus' views were not accepted by subsequent Alexandrian philosophers. They revert to the common Neoplatonic view of formless prime matter below the level of unqualified body, which is the proximate matter of the elements.[32]

Nevertheless, I wish to qualify the ingenious suggestion made by Verrycken that the replacement of a First Principle above Being with a First Principle which is the First Being,[33] made its complement, Matter below Being, redundant. Although this is a possible route to Philoponus' world view, there is no clear indication that Philoponus took it.[34] He does refer to the Mosaic dictum, as he calls it,[35] that God styled Himself 'He Who is'. However, Philoponus only wants to point out

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Ammonius and Philoponus do not show such wavering any more: for them the One is the sole cause of matter.

[30] Cf. Schwyzer (1973) 280, Verrycken (1985) II 183-184, 333-336.

[31] Cf. Philop. *in Cat.* 51.23-52.8 (= Amm. *in Cat.* 36.23-26); *in Phys.* 162.3-163.12 contains the concise conclusion ἀνόμοιος οὖν ἡ ὁμοιότης (162.17-18). For a comprehensive study on the *via negativa* in Christian and Greek thought, see R. Mortley, *From Word to Silence. The Way of Negation, Christian and Greek*, vols. I-II, Bonn 1986 (I owe this reference to David Runia).

[32] In later Alexandrian philosophers unqualified body continues to serve as the substrate of the elements, but they neglect Philoponus' rejection of incorporeal prime matter. Cf. e.g. Olymp. *in Alc.* 133.3-6 (matter is less than every form); David *in Isag.* 112.31-113.1, 205.33-35, 206.11-14, David (Elias) *in Cat.* 154.34-37, 159.29-30, 185.19-20 (all three providing the traditional stratification of the lower realm), 173.23-28 (hotness is substance in relation to fire, accident in relation to unqualified body), 199.28-31 (introducing the phrase 'secondary qualities' to denote whiteness etc. which supervene on unqualified body only when it is already qualified by the 'first' qualities of the elements).

[33] Cf. Ex. 3:14, where God introduces himself as 'I am the one Who is'—ἐγώ εἰμι ὁ ὤν in the Greek of the Septuagint, which was understood as 'I am the fullness of being'. A particularly illuminating contrast is found in Plotinus: the One cannot say ἐγώ εἰμι (*Enn.* VI.7 [38] 38.11), matter cannot even say ὡς ἐγὼ ἐνταῦθα (*Enn.* III.6 [26] 15.28).

[34] Verrycken (1985) III 765 only qualifies his statement in that he grants that this economical motive might not have been Philoponus' *conscious* purpose.

[35] *Contra Proclum* VI.7 142.10, after quoting *Tim.* 37 e 1-38 a 4 and 38 b 3-c 6.

that Plato, who reserved the present tense 'is' (ἔστιν) for his god,[36] is in agreement with Moses.[37] There is no sign that Philoponus saw Exodus 3:14 as an inspiration (or instruction) to correct current opinions on prime matter.

Again we should note that Simplicius arrives at the same notion of prime matter almost certainly without Christian inspiration. Each aspect of Philoponus' theory of matter which has a parallel in Simplicius or Ammonius may well derive from the same sources and motivations as it does in their case: a proper understanding of and a response to Platonic and Aristotelian philosophy and the philosophical tradition, notably Plotinus. Hence the strong influence of the contemporary physical and philosophical problems which we have described in this study should make us wary of assuming Christianity as Philoponus' sole or primary motivation.

Philoponus' interest in physical problems and his agreement with developments in the philosophy of his day may also cast doubts on parts of the argumentation Verrycken used to support his two systems hypothesis. For if Philoponus could have arrived at his new view of matter within the framework of current philosophy and science, it is not at all likely that his aim in doing so was to develop a world view which was more in line with Christianity—at least not at first.[38] We should allow for the possibility that Philoponus had developed his new view of matter *before* he saw reason to employ it in a wholesale attack on pagan philosophy and a defence of Creation. It may be that Justinian's aggressive Christian politics and his closing of the Athenian Academy provided Philoponus with an occasion for attacking Proclus, Athens' chief claim to fame. Or perhaps his fellow Christians made him aware of the significance of his research and urged him to write a defence of Creation; or maybe both. However, there is no need to assume that these developments in Philoponus' thought were induced by the same motive that made him embark on a programme of defence of creation, and therefore no need to date the new view of matter *after*

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[36] *Tim.* 37 e 6-38 a 1 τῇ δὲ τὸ ἔστιν μόνον κατὰ τὸν ἀληθῆ λόγον προσήκει (*sc.* τῇ ἀιδίῳ οὐσίᾳ, 37 e 5).

[37] This is part of a tradition linking the philosophy of Plato to Judaeo-Christian thought; cf. Whittaker (1967), Ciholas (1978-79), and the exhaustive discussion in Dörrie/Baltes (1990) 190-217, 480-505.

[38] His vivid interest in these matters also rules out the theoretical possibility that in both the *Contra Proclum* and the *Contra Aristotelem* he is only arguing for the sake of polemics, and not professing his own views.

529 AD. So far as we can see, that date only marks the moment in which Philoponus mobilized his impressive knowledge of Neoplatonic physics and metaphysics in order to argue for the good cause. If I am right, and if a similar account could be given of Philoponus' development with regard to topics other than matter, at least some of the so-called insertions in earlier commentaries might have been written *before* 529 AD, and perhaps even during the first redaction of these commentaries. Needless to say, this would call for a reconsideration of Verrycken's chronology of Philoponus.[39]

This interpretation of Philoponus' work is not contradicted by the fact that Simplicius, in his attack on Philoponus' *Contra Aristotelem,* makes several more or less oblique references to Christians and the Bible as the motivation of Philoponus' argument. For instance, in the Prologue of the *Contra Aristotelem* (esp. ap. Simpl. *in Cael.* 26.5-7) Philoponus seems to imply that Genesis 1:14-18 and 26-30 might provide a motive for arguing that the heavenly and sublunary realms are equally perishable because they were both made merely to serve man. Such references suggest that Philoponus might have shown more awareness of Biblical arguments in parts of the *Contra Aristotelem* than he did in the *Contra Proclum.* This is confirmed by a Syrian fragment of book VIII of the *Contra Aristotelem* in which it is stated that the universe will not perish into non-being because God will establish a new heaven and a new earth.[40] Apparently Simplicius, who preserved for us fragments from books I-VI only, was merely interested in the philosophical arguments and left out the more theological ones. In this context it should be remembered that the prologue and epilogue of the *Contra Proclum*, which seem to have contained interesting details on the programme Philoponus had in mind,[41] are now lost. Perhaps 'philosophical scissors' like those of Simplicius are responsible for the disappearance of Philoponus' biblical justification for his writings.[42] However that may be, we would of course expect a more explicit Christian justification from 529 AD onwards. This does not at all rule out the possibility that the (meta)physical doctrines contained in the polemics had been developed earlier from an entirely

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[39] I intend to contribute to such a reconsideration on another occasion.

[40] See *Contra Aristotelem* fr. 134 W. Cf. Isaiah 65:17, 66:22; Revelation 21:1.

[41] See esp. *Contra Proclum* XVIII 611.25-26 προαναφώνησις τῶν ἑξῆς.

[42] Only a few references to the Bible are found in the *Contra Proclum* as we have it, see Index I s.v. 'Sacrae scripturae loci' in Rabe's edition.

different perspective. The difference is that from 529 onwards, Philoponus' aim is no longer to unveil the all too hidden agreement between Plato and Aristotle, which he now simply rejects,[43] but to find his way to a true account of the creation of the world.

So far as I can see, Philoponus' Christian faith may have to be invoked at one point only, a point in which he diverges widely from Simplicius, viz. his attitude towards the philosophical tradition. We have seen that Simplicius tried to convince his readers that his admittedly unorthodox view of prime matter is not only reconcilable with the tradition but in fact *the* proper interpretation of Egyptian, Pythagorean, Platonic and Aristotelian doctrine. Philoponus' attitude is the very opposite: when we can be certain that he is speaking his own mind, he continuously points out minor and major mistakes and absurdities in traditional philosophical doctrine. He feels no obligation whatsoever to agree with the tradition, and when he does, for instance when adducing Platonic or Aristotelian texts in support of his own doctrine, it is in all likelihood merely a polemical strategy. Only behind his allusion to Plotinus we found a more serious, though certainly not servile, dependence in matters of doctrine. The two complementary books IX and XI of the *Contra Proclum* are a good illustration of this ambivalent attitude: IX.1-4 and XI.13-14 contain a wide-ranging polemics against Plato illustrating the point that Plato need not be followed at all cost. What is more, Philoponus points out that, judging from Plato's Socrates, Plato himself would like his interpreters to value the truth above his own authority.[44] On the other hand, XI.15 draws on Plato's *Timaeus* in support of the argument that matter has a beginning because the cosmos has a beginning.

I would like to suggest that Philoponus only felt secure enough to attempt to overthrow the doctrines of the main representatives of the ancient philosophical tradition (Plato, Aristotle, Plotinus, and Proclus) because he possessed a fixed point of reference outside that tradition:

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[43] *Contra Proclum* II.2 26.20-32.13, cf. *in Anal.Post.* 242.14-243.25.

[44] On the topos *amicus Plato sed magis amica veritas*, which derives from Arist. *EN* I.6 1096 a 11-17 (who may have drawn on Plato *Phdo* 91 c and *Rep.* 595 c 2-3), see Tarán (1984). Verrycken (1990b) 262-263 has suggested that Philoponus' emphasis on this point might betray a feeling of guilt towards his past and towards his own master Ammonius, whose views of the eternity of the world he felt obliged to reject. Cf. Philop. *Contra Proclum* II.2 30.25-31.7, XI.14 463.24-25, 464.15-17; compare XI.8 445.7-14, the final conclusion of the excursus on matter, containing a quotation from Plato *Alc.* I 114 e 7-9: εἰ μὴ σὺ γὰρ σαυτοῦ λέγοντος ἀκούσῃς, ἄλλῳ λέγοντι μηδέποτε πιστεύσῃς.

his Christian faith and the Word of God. That might also explain why his Alexandrian successors all preferred Ammonius' doctrines, thus reinstating incorporeal prime matter below the level of unqualified body.

Archimedes, who had studied the mechanics of leverage, once said: 'Give me a place to stand and I shall move the earth'.[45] It is no exaggeration to call John Philoponus a sixth century Archimedes in philosophy.

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[45] Cf. Papp. *Synag.* VIII 1060, 1-4 Hultsch: Δός μοι ποῦ στῶ καὶ κινῶ τὴν γῆν; compare Simpl. *in Phys.* 250 a 19, 1110.5.

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For Philoponus' *De aeternitate mundi contra Proclum* I used the standard Teubner edition by H. Rabe, Leipzig 1899. A new edition with French translation and notes is currently being prepared by J. Whittaker (Newfoundland) for the Budé. An English translation will appear in the ACA series. I prefer the reference *Contra Proclum* to the traditional reference *Aet.* in order to distinguish this work from the fragments of the *De aeternitate mundi contra Aristotelem,* now available in English translation (Wildberg 1987a), and cited as *Contra Aristotelem.* However, I still use the reference *Aet.* for Proclus' work *Duodeviginti argumenta de aeternitate mundi,* most of which is preserved in Philoponus' *Contra Proclum* to which the page and line numbers refer; the first argument is known only from Arabic sources (see Anawati [1956], Badawi [1987^2] 72-73, 133-134).

For a full bibliography on Philoponus see Sorabji *Philoponus* 236-245, with additions until 1994 by Verrycken (1994) 264-272. From those surveys I here only list the works that I have used in preparing this book. Entries marked with an asterisk (*) can be regarded as *addenda* to Verrycken's bibliography. Journals are referred to by the abbreviations used in *L'année philologique* (Paris) or, when absent there, in the *International Philosophical Bibliography* (Leuven).

My work on the extensive corpora of the Neoplatonists was much facilitated by the invaluable Thesaurus Linguae Graecae on CD-ROM, produced by the University of California at Irvine (United States). For accessing the CD-ROM I used the View&Find software by Burkhard Meißner (Halle/Saale, Germany) which proved an extremely quick and reliable tool.

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